THE INFLUENCE OF PRELIMINARY CULTIVATION ON THE RESISTANCE AND STRUCTURES OF CELLS DURING FREEZING AND LYOPHILIZATION

AUTHOR: EMTSEVA T V; LAVROVA L N; KONSTANTINOVA N D
AUTHOR ADDRESS: ALL-UNION RES. INST. GENET. SEL. IND. MICROORG., MOSCOW, RUSSIA.

JOURNAL: MIKROBIOLOGIYA 60 (5). 1991. 879-889.
FULL JOURNAL NAME: Mikrobiologiya
CODEN: MIKBA
RECORD TYPE: Abstract
LANGUAGE: RUSSIAN

ABSTRACT: The influence of preceding cultivation on the viability of strains Serratia marcescens VKPM V-143 and Erwinia aroideae VKPM V-1356 during lyophilization and low-temperature storage (-70.degree.C) was studied. Cultivation on nutritive medium with added 0.2% oleic acid and 0.5 .sbd. 1.0% Tween-80 was shown to **increase viability** by 20 .sbd. 30% and to ensure maintainence of stability during 1.5 year storage. During low-temperature storage high viability (88 .sbd. 98%) and stability were provided for by adding 0.03% oleic acid and 1.0% Tween-80. Electron-microscopic investigations showed that addition of 0.2% oleic acid to the medium of preceding cultivation not only favoured **viability increase** of the cultures during lyophilization, but also influenced the structure of the cells. This provides ground to suggest that better survival during lyophilization after the suggested conditions of pre-cultivation was associated not only with change of the ratio of saturated **fatty acids** to unsaturated ones, but also with alterations of cellular structures.

BOVINE BILE RESISTANCE **INCREASES** LEUCONOSTOC-OENOS 44.40 **VIABILITY** UPON LYOPHILIZATION

AUTHOR: KOLE M; ALTOSAAR I
AUTHOR ADDRESS: BIOTECHNOL. DEP., ALBERTA RES. COUNCIL, EDMONTON, ALBERTA, CANADA T6G 2C2.

JOURNAL: APPL ENVIRON MICROBIOL 47 (5). 1984. 1150-1153.
FULL JOURNAL NAME: Applied and Environmental Microbiology
CODEN: AEMID
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: A screening method based on the selection of strains of L. oenos 44.40 resistant to bovine bile was developed to obtain strains of the organism more resistant to lyophilization damage. These strains could be used as starter cultures in the malolactic fermentation of wine. The strain resistant to bovine bile was 20% more viable after lyophilization than strains not resistant to bovine bile. This was confirmed in laboratory-scale production (100 ml) and pilot-scale production (100 l). Lyophilized cells of strains sensitive and resistant to bovine bile were inoculated into wine and the malate metabolism by the organism was monitored in the wine. Resistance to bovine bile did not change the malate metabolism characteristic of the organism. A comparison was made of the **fatty acid** compositions of the 2 strains. There was a difference in the **fatty acid** distribution pattern for these 2 strains. The bovine bile-resistant strain contained more dodecanoic, hexadecanoic and octadecanoic acid and less tetradecanoic and hexadecanoic acid than did the bovine bile-sensitive strain. Both strains contained high levels of C-19 cyclopropane **fatty acid**.

Fatty acid composition of Escherichia coli cells and their viability in air]

Zhirnokislotnyi sostav kletok Escherichia coli i ikh vyzhivaemost' v vozdukhe.

Bogoslovskaia OA; Andreev LV; Burlakova EB; Glushchenko NN; Koniukhov VF

Zh Mikrobiol Epidemiol Immunobiol (USSR) Dec 1984, (12) p65-8, ISSN 0372-9311 Journal Code: Y9O

Languages: RUSSIAN Summary Languages: ENGLISH

Document type: JOURNAL ARTICLE English Abstract

JOURNAL ANNOUNCEMENT: 8506

Subfile: INDEX MEDICUS

Experiments on E. coli used as a model have revealed that **fatty-acid** composition is one of the characteristics which determine the viability of **bacteria** in the air. The **viability** of microbial cells in the air has been shown to **increase** with the increase of the pool of cyclopropane acids and the palmitic acid/palmitoleic acid ratio in the cells, irrespective of their genotype and the phase of their growth.

Descriptors: Air Microbiology; *Escherichia coli--Analysis--AN; * **Fatty Acids**--Analysis--AN; Aerosols; Escherichia coli --Physiology--PH; Regression Analysis

CAS Registry No.: 0 (Aerosols); 0 (Fatty Acids)

SR1 F41 /

03928477 BIOSIS NO.: 199396079978
Dependence of fatty acid composition of Listeria spp. on growth temperature.

AUTHOR: Puettmann M; Ade N; Hof H(a)
AUTHOR ADDRESS: (a)Inst. Med. Microbiol. and Hygiene, Fac. Clin. Med. Mannheim, Univ. Heidelberg, 6800-Mannheim, Germany

JOURNAL: Research in Microbiology 144 (4):p279-283 1993
ISSN: 0923-2508
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English; French

ABSTRACT: In Listeria spp., various fatty acids are produced; by far the most common members are C-15 and C-17 chain length fatty acids. This pattern is rather similar in all species. At low temperatures, most of the Listeria are able to change the relative composition whereby more of the C-15 fatty acids are produced, which could **increase** the **fluidity** of the **bacterial** cell **membrane** under these

EVIDENCE THAT STREPTOCOCCUS-MUTANS CONSTRUCTS ITS MEMBRANE WITH EXCESS FLUIDITY FOR SURVIVAL AT SUBOPTIMAL TEMPERATURES

AUTHOR: TSIEN H; PANOS C; SHOCKMAN G D; HIGGINS M L
AUTHOR ADDRESS: DEP. MICROBIOL. IMMUNOL., TEMPLE UNIV. SCH. MED., PHILADELPHIA, PA. 19140, USA.

JOURNAL: J GEN MICROBIOL 121 (1). 1980 (RECD. 1981). 105-112.
FULL JOURNAL NAME: Journal of General Microbiology
CODEN: JGMIA
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: When cells from cultures of S. mutans strain FA-1 grown at 37.degree. C were exposed to incubation temperatures of 26.degree. C or less for 5 min or more, an extensive aggregation of particles was observed on the convex fracture faces of their freeze-cleaved membranes. Aggregation of particles was accompanied by a parallel increase in the activation energy for growth. By shifting the growth temperature from 37-24.degree. C for 1 doubling of culture mass, the transition temperature for membrane particle aggregation could be lowered from about 26-0.degree. C. Although membrane lipids became enriched with unsaturated fatty acids during this period of growth at 24.degree. C, this enrichment was not accompanied by an increased growth rate of the culture. The period of growth at 24.degree. C did result in bacteria that could grow more rapidly at 10.degree. C than could bacteria directly transferred from cultures grown at 37.degree. C. Thus, the **increase** in **membrane fluidity** that occurs when **bacteria** are grown at 24.degree. C does not allow bacteria to grow faster at 24.degree. C but rather allows them to adapt more readily to further decreases in

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$%^Dialog HighlightOn=%%%,HighlightOff=%%%

Logging in to Dialog

Trying 9158046 Open

DIALOG INFORMATION SERVICES
PLEASE LOGON
 ********
ENTER PASSWORD
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Welcome to DIALOG

Dialog level 99.07.29D

Last logoff 08sep99 10:34:21
Logon file495 17sep99 12:09:15
ANNOUNCEMENT **** ANNOUNCEMENT **** ANNOUNCEMENT
NEW
***Market Guide Company Financials (File 100)
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***Gale Group New Product Announcements (File 621)
***Aerospace/Defense Markets & Technology (File 80)
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***Philosopher's Index (File 57)

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   >>>   of new databases, price changes, etc.     <<<
dialog
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File 495 The Columbus Dispatch 1988-1999/Aug 29
      (c) 1999 Dispatch Printing Co
*File 495 The Columbus Dispatch is no longer updating

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    $0.11  Estimated cost File495
         FTSNET   0.016 Hrs
    $0.11  Estimated cost this search
    $0.11  Estimated total session cost   0.107 DialUnits

File 410 Chronolog(R) 1981-1999 Jul/Aug
      (c) 1999 The Dialog Corporation plc

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    $0.00  Estimated cost File410
         FTSNET   0.007 Hrs
    $0.00  Estimated cost this search
    $0.11  Estimated total session cost   0.164 DialUnits

SYSTEM OS - DIALOG OneSearch
 File  55 Biosis Previews(R) 1993-1999/Aug W2
      (c) 1999 BIOSIS
*File  55 File is reloaded. Accession number changed
 File   5 Biosis Previews(R) 1969-1999/Aug W2
      (c) 1999 BIOSIS
 File 434 SciSearch(R) Cited Ref Sci 1974-1989/Dec
      (c) 1998 Inst for Sci Info
 File 144 Pascal 1973-1999/Aug
      (c) 1999 INIST/CNRS

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? s bacter?

    S1 1871321  BACTER?
? s membrane#

    S2       0  MEMBRANE#
? s membrane?

    S3 1452758  MEMBRANE?
? s s1 (10n) s2

      1871321  S1
            0  S2
    S4       0  S1 (10N) S2
? s s1 (10n) s3

      1871321  S1
      1452758  S3
    S5   26356  S1 (10N) S3
? s increas? or enhanc?

      2625697  INCREAS?
       665472  ENHANC?
    S6 3058102  INCREAS? OR ENHANC?
? s fluid?

    S7  607785  FLUID?
? ds


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S3   1452758  MEMBRANE?
S4         0  S1 (10N) S2
S5     26356  S1 (10N) S3
S6   3058102  INCREAS? OR ENHANC?
S7    607785  FLUID?
? s s6 (10n) s7

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       607785  S7
    S8   26248  S6 (10N) S7
? s s5 (10n) s8

        26356  S5
        26248  S8
    S9      15  S5 (10N) S8
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>>>Set 15 has not yet been created
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    S10      10  RD S9 (unique items)
? t s10/k/1-10


10/K/1     (Item 1 from file: 55)
DIALOG(R)File  55:(c) 1999 BIOSIS. All rts. reserv.

..ABSTRACT: 6-phenyl-1,3,5-hexatriene. There was a dose-dependent and
 reversible inhibition of %%%bacterial%%% adhesion with
%%%increasing%%%
 %%%membrane%%% %%%fluidity%%%. Time course experiments indicated
that
 %%%increasing%%% %%%membrane%%% %%%fluidity%%% during the
early stages of
 %%%bacterial%%% adhesion was essential for inhibition of attachment. None
 of the fluidizers affected the viability of


10/K/2     (Item 2 from file: 55)
DIALOG(R)File  55:(c) 1999 BIOSIS. All rts. reserv.

..ABSTRACT: doxyl-stearic acid methyl ester (in which the nitroxide group
 is located deeper in the %%%bacterial%%% cell %%%membrane%%%), by
means
 of electron spin resonance. The %%%membrane%%% %%%fluidities%%% of
 plaunotol-treated cells were significantly %%%increased%%% in the
 measurements made using the two spin labels. We also attempted to isolate
 plaunotol


10/K/3     (Item 3 from file: 55)
DIALOG(R)File  55:(c) 1999 BIOSIS. All rts. reserv.

..ABSTRACT: that at least two mechanisms are responsible for the
 development of postcesarean open wounds. (1) %%%increased%%% amniotic
 %%%fluid%%% and wound colonization due to prolonged rupture of
 %%%membranes%%%, resulting in a wound infection containing one or more
 %%%bacterial%%% species derived from the cervicovaginal flora, and (2)
 increased exogenous bacterial contamination and flora consistent


10/K/4     (Item 4 from file: 55)
DIALOG(R)File  55:(c) 1999 BIOSIS. All rts. reserv.

..ABSTRACT: the relative composition whereby more of the C-15 fatty acids
 are produced, which could %%%increase%%% the %%%fluidity%%% of the
 %%%bacterial%%% cell %%%membrane%%% under these conditions.
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10/K/5 (Item 1 from file: 5)
DIALOG(R)File 5:(c) 1999 BIOSIS. All rts. reserv.

ABSTRACT: twenty years. In a series of studies, high concentrations of silicon were detected in mucous %%%membrane%%% tissue in suppurative sinusitis. Pseudomonas aeruginosa is a species of %%%bacteria%%% frequently found in chronic sinusitis. An %%%increase%%% in the number of Pseudomonas aeruginosa in various culture %%%fluids%%% containing silicon, ranging from 10 to 350 ppm, was observed up until 16 hours by

10/K/6 (Item 2 from file: 5)
DIALOG(R)File 5:(c) 1999 BIOSIS. All rts. reserv.

DESCRIPTORS: %%%INCREASED%%% %%%BACTERIAL%%% %%%MEMBRANE%%% %%%FLUIDITY%%%

10/K/7 (Item 3 from file: 5)
DIALOG(R)File 5:(c) 1999 BIOSIS. All rts. reserv.

ABSTRACT: hemolysis of erythrocytes was also inhibited. Taurine decreased the fluorescence depolarization of diphenylhexatriene, indicating an %%%increase%%% in %%%membrane%%% %%%fluidity%%%. Evidently, taurine strengthens both phagocytic and %%%bactericidal%%% capacities of neutrophils by %%%increasing%%% the %%%fluidity%%% of neutrophil %%%membrane%%% and membrane stability and plays an important role in the mechanism of host defense.

10/K/8 (Item 4 from file: 5)
DIALOG(R)File 5:(c) 1999 BIOSIS. All rts. reserv.

ABSTRACT: bacteroid cytoplasmic membrane was also qualitatively demonstrable with the fluorescent probe. Ca2+ caused respiration-supported %%%bacteroid%%% %%%membrane%%% potentials to %%%increase%%%. This effect was accompanied by %%%increases%%% in membrane %%%fluidity%%% and nitrogenase activity in the absence of external reducing agents or added ATP.

10/K/9 (Item 5 from file: 5)
DIALOG(R)File 5:(c) 1999 BIOSIS. All rts. reserv.

ABSTRACT: C than could bacteria directly transferred from cultures grown at 37 degree C. Thus, the %%%increase%%% in %%%membrane%%% %%%fluidity%%% that occurs when %%%bacteria%%% are grown at 24 degree C does not allow bacteria to grow faster at 24

10/K/10 (Item 1 from file: 144)
DIALOG(R)File 144:(c) 1999 INIST/CNRS. All rts. reserv.

that at least two mechanisms are responsible for the development of postcesarean open wounds: (1) %%%increased%%% amniotic %%%fluid%%% and wound colonization due to prolonged rupture of %%%membranes%%%, resulting in a wound infection containing one or more %%%bacterial%%% species derived from the cervicovaginal flora, and (2) increased exogenous bacterial contamination and flora consistent
?t s10/9/4. 6. 9

10/9/4 (Item 4 from file: 55)
DIALOG(R)File 55:Biosis Previews(R)
(c) 1999 BIOSIS. All rts. reserv.

08928477. BIOSIS NO.: 199396079978
Dependence of fatty acid composition of Listeria spp. on growth temperature.

AUTHOR: Puettmann M.; Ade N.; Hof H(a)
AUTHOR ADDRESS: (a)Inst. Med. Microbiol. and Hygiene, Fac. Clin. Med. Mannheim, Univ. Heidelberg, 6800-Mannheim, Germany.

JOURNAL: Research in Microbiology, 144 (4) p279-283, 1993.
ISSN: 0923-2508.
DOCUMENT TYPE: Article.
RECORD TYPE: Abstract.
LANGUAGE: English.
SUMMARY LANGUAGE: English, French.

ABSTRACT: In Listeria spp., various fatty acids are produced, by far the most common members are C-15 and C-17 chain length fatty acids. This pattern is rather similar in all species. At low temperatures, most of the Listeria are able to change the relative composition whereby more of the C-15 fatty acids are produced, which could %%%increase%%% the %%%fluidity%%% of the %%%bacterial%%% cell %%%membrane%%% under these conditions.

DESCRIPTORS:
MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Membranes (Cell Biology); Physiology.
BIOSYSTEMATIC NAMES: Gram-Positive Cocci--Eubacteria, Bacteria; Regular Nonsporing Gram-Positive Rods--Eubacteria, Bacteria.
ORGANISMS: regular nonsporing gram-positive rods (Regular Nonsporing Gram-Positive Rods); Streptococcus salivarius (Gram-Positive Cocci).
BIOSYSTEMATIC CLASSIFICATION: (SUPER TAXA): bacteria; eubacteria; microorganisms.
MISCELLANEOUS TERMS: DENTAL CARIES; FRUCTOSE; GLUCOSE; MANNOSE; PHOSPHOTRANSFERASE SYSTEM.
CONCEPT CODES:
10066 Biochemical Studies-Lipids
10506 Biophysics-Molecular Properties and Macromolecules
10508 Biophysics-Membrane Phenomena
10614 External Effects-Temperature as a Primary Variable (1971-)
31000 Physiology and Biochemistry of Bacteria
BIOSYSTEMATIC CODES:
07830 Regular Nonsporing Gram-Positive Rods (1992-)

10/9/6 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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05930711. BIOSIS NO.: 000035022074
METABOLIC RESPONSES OF NEISSERIA-GONORRHOEAE TO HUMAN SERUM AND MYELOID CELLS: ADAPTATION TO HOST DEFENSES

AUTHOR: COHEN M.S.; BRITIGAN B.E.
AUTHOR ADDRESS: DEP. MED., UNIV. NORTH CAROLINA AT CHAPEL HILL, CHAPEL HILL, N.C., USA.

JOURNAL: VTH INTERNATIONAL PATHOGENIC NEISSERIAE CONFERENCE, NOORDWIJKERHOUT, NETHERLANDS, SEPTEMBER 15-18, 1986: ANTONIE LEEUWENHOEK J.
MICROBIOL. 53 (6), 1987, 545-550.
CODEN: ANLED.
RECORD TYPE: Citation.
LANGUAGE: ENGLISH.

DESCRIPTORS: %%%INCREASED%%% %%%BACTERIAL%%% %%%MEMBRANE%%% %%%FLUIDITY%%%
CONCEPT CODES:
02508 Cytology and Cytochemistry-Human
10508 Biophysics-Membrane Phenomena
15002 Blood, Blood-Forming Organs and Body Fluids-Blood and Lymph: Studies
15008 Blood, Blood-Forming Organs and Body Fluids-Lymphatic Tissue and Reticuloendothelial System
30500 Morphology and Cytology of Bacteria
31000 Physiology and Biochemistry of Bacteria
34504 Immunology and Immunochemistry-Bacterial, Viral and Fungal
34508 Immunology and Immunochemistry-Immunopathology, Tissue Immunology
36002 Medical and Clinical Microbiology-Bacteriology
00520 General Biology-Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals
BIOSYSTEMATIC CODES:
05110 Neisseriaceae (1979-)
86215 Hominidae
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA):
Microorganisms
Bacteria
Animals
Chordates
Vertebrates
Mammals
Primates
Humans

10/9/9 (Item 5 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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03270202. BIOSIS NO.: 000071083313
EVIDENCE THAT STREPTOCOCCUS-MUTANS CONSTRUCTS ITS MEMBRANE WITH EXCESS FLUIDITY FOR SURVIVAL AT SUBOPTIMAL TEMPERATURES

AUTHOR: TSIEN H.; PANOS C.; SHOCKMAN G.D.; HIGGINS M.L.
AUTHOR ADDRESS: DEP. MICROBIOL. IMMUNOL., TEMPLE UNIV. SCH. MED., PHILADELPHIA, PA, 19140, USA.

JOURNAL J GEN MICROBIOL 121 (1) 1980 (RECD 1981) 105-112
FULL JOURNAL NAME Journal of General Microbiology
CODEN JGMIA
RECORD TYPE Abstract
LANGUAGE ENGLISH

ABSTRACT When cells from cultures of S. mutans strain FA-1 grown at 37 degree C were exposed to incubation temperatures of 26 degree C or less for 5 min or more, an extensive aggregation of particles was observed on the convex fracture faces of their freeze-cleaved membranes Aggregation of particles was accompanied by a parallel increase in the activation energy for growth By shifting the growth temperature from 37-24 degree C for 1 doubling of culture mass, the transition temperature for membrane particle aggregation could be lowered from about 26-0 degree C Although membrane lipids became enriched with unsaturated fatty acids during this period of growth at 24 degree C this enrichment was not accompanied by an increased growth rate of the culture The period of growth at 24 degree C did result in bacteria that could grow more rapidly at 10 degree C than could bacteria directly transferred from cultures grown at 37 degree C Thus, the %%%increase%%% in %%%membrane%%% %%%fluidity%%% that occurs when %%%bacteria%%% are grown at 24 degree C does not allow bacteria to grow faster at 24 degree C but rather allows them to adapt more readily to further decreases in growth temperature

DESCRIPTORS GROWTH ACTIVATION ENERGY FATTY-ACIDS
CONCEPT CODES
10508 Biophysics-Membrane Phenomena
10614 External Effects-Temperature as a Primary Variable (1971-)
13002 Metabolism-General Metabolism Metabolic Pathways
30500 Morphology and Cytology of Bacteria
31000 Physiology and Biochemistry of Bacteria
10010 Comparative Biochemistry, General
10050 Biochemical Methods-General
10060 Biochemical Studies-General
10066 Biochemical Studies-Lipids
10502 Biophysics-General Biophysical Studies
10504 Biophysics-General Biophysical Techniques
10506 Biophysics-Molecular Properties and Macromolecules
10616 External Effects-Temperature as a Primary Variable-Cold (1971-)
10618 External Effects-Temperature as a Primary Variable-Hot (1971-)
13202 Nutrition-General Studies, Nutritional Status and Methods
23001 Temperature Its Measurement, Effects and Regulation-General Measurement and Methods
23004 Temperature Its Measurement, Effects and Regulation-Cryobiology
32000 Microbiological Apparatus, Methods and Media
32300 Microbiological Ultrastructure (1972-)
BIOSYSTEMATIC CODES
05514 Streptococcaceae (1979-)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA)
Microorganisms
Bacteria
ds

Set Items Description
S1 1871321 BACTER?
S2 0 MEMBRANE#
S3 1452758 MEMBRANE?
S4 0 S1 (10N) S2
S5 26356 S1 (10N) S3
S6 3058102 INCREAS? OR ENHANC?
S7 507785 FLUID?
S8 26248 S6 (10N) S7
S9 15 S5 (10N) S8
S10 10 RD S9 (unique items)
s unsaturated (5n) fatty (w) acid?

74453 UNSATURATED
248583 FATTY
2568254 ACID?
S11 18323 UNSATURATED (5N) FATTY (W) ACID?
s s6 (10n) s11

3058102 S6
18323 S11
S12 1620 S6 (10N) S11
s s12 and s5

1620 S12
26356 S5
S13 17 S12 AND S5
rd s13

completed examining records
S14 14 RD S13 (unique items)
t s14/k/1-14

14/K/1 (Item 1 from file: 55)
DIALOG(R)File 55 (c) 1999 BIOSIS All rts reserv

Adaptive changes in %%%membrane%%% lipids of barophilic %%%bacteria%%% in response to changes in growth pressure

ABSTRACT saturated fatty acids in PE were reduced, and these decreases were mainly balanced by an %%%increase%%% in %%%unsaturated%%% %%%fatty%%% %%%acids%%%, including DHA In PG, the decrease in saturated fatty acids was mainly balanced by an...

14/K/2 (Item 2 from file: 55)
DIALOG(R)File 55 (c) 1999 BIOSIS All rts reserv

ABSTRACT The physiological significance of trans unsaturated fatty acids, which are constituents of %%%membrane%%% lipids of the phenol-degrading %%%bacterium%%% Pseudomonas putida P8, was studied The addition of phenol or phenol derivatives to the cells

occurred at higher toxin concentrations compared with free cells Cells entering the stationary growth phase %%%increased%%% the proportion of saturated to %%%unsaturated%%% %%%fatty%%% %%%acids%%% but maintained a constant trans/cis ratio P putida P8 reacted to an increase or

14/K/3 (Item 1 from file: 5)
DIALOG(R)File 5 (c) 1999 BIOSIS All rts reserv

ABSTRACT 5, 15, 25 and 37 degree C were analyzed and the physical states of these %%%membrane%%% lipids were characterized The major phospholipids of this %%%bacterium%%% were phosphatidylethanolamine phosphatidylglycerol, cardiolipin, lysophosphatidylglycerol and lysophosphatidylethanolamine No significant difference in phospholipid composition in response.

..the change of culture temperature. When the culture temperature was raised, the saturated and cyclopropane %%%fatty%%% %%%acids%%% substantially %%%increased%%% and the %%%unsaturated%%% ones decreased A reverse phenomenon was observed when culture temperature was lowered From the viewpoints

14/K/4 (Item 2 from file: 5)
DIALOG(R)File 5 (c) 1999 BIOSIS All rts reserv

ABSTRACT ethanol. (2) Effect on membrane fatty acid composition was investigated in vitro Ethanol (3%) markedly %%%increased%%% proportions of %%%unsaturated%%% %%%fatty%%% %%%acids%%% (UFA) of mixed rumen microorganisms. Experiments with single strains of rumen bacteria showed that bacteria

growth by ethanol the less significant changes in fatty acid composition were seen Some rumen %%%bacteria%%% appear to change their %%%membrane%%% fatty acid composition as a way of adaptation to ethanol In conclusion, ethanol is not

14/K/5 (Item 3 from file: 5)
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%%%MEMBRANE%%% LIPIDS OF A PSYCHROPHILIC AND BAROPHILIC DEEP-SEA %%%BACTERIUM%%%

ABSTRACT a psychrophilic and barophilic marine bacterial isolate of the genus Alteromonas, the ratio of total %%%unsaturated%%% versus saturated %%%fatty%%% %%%acids%%% in the membrane lipids %%%increased%%% when the organism was grown at increasing hydrostatic pressure and decreasing temperatures This regulatory capacity

14/K/6 (Item 4 from file: 5)
DIALOG(R)File 5 (c) 1999 BIOSIS All rts reserv

ABSTRACT mechanisms remain to be clarified. The ciliated protozoan Tetrahymena pyriformis (NT-1), with its defined %%%membrane%%% organization and %%%bacteria%%%-like rapid growth, has been employed as a suitable model system for studying the thermal...

degree C-grown Tetrahymena cells were shifted to 15 degree C the relative proportion of %%%unsaturated%%% %%%fatty%%% %%%acids%%% especially gamma -linolenic acid, was %%%increased%%% with a compensating decrease of palmitic acid in phospholipids However after the shift, the rate

of reacylation enzyme activities during temperature acclimation would exert only a small contribution to the %%%increased%%% level of %%%unsaturated%%% %%%fatty%%% %%%acids%%% in phospholipids. In contrast, the reacylating enzymes would partially participate in the %%%increase%%% of %%%unsaturated%%% %%%fatty%%% %%%acid%%% content in 15 degree C-grown cells. On the other hand, the deacylation enzyme, phospholipase

14/K/7 (Item 5 from file: 5)
DIALOG(R)File 5:(c) 1999 BIOSIS. All rts. reserv.

%%%BACTERIAL%%% %%%MEMBRANES%%% AND LIPID PACKING THEORY

ABSTRACT: species of phosphatidylethanolamine [PE], p asmenylethanolamine or monoglycosyldiacylglycerols, all of which are important constituents of the %%%membranes%%% of different groups of prokaryotes. The polar lipid compositions of %%%bacteria%%% are examined in terms of lipid packing theory. This survey reveals that gram-negative species

of organisms, and by incorporation of cholestero- in A. laidlawii. As the content of cis-%%%unsaturated%%% %%%fatty%%% %%%acids%%% or temperature is %%%increased%%%, lipids that form an unstable lamellar phase at physiological temperatures are replaced with lipids that

14/K/8 (Item 6 from file: 5)
DIALOG(R)File 5:(c) 1999 BIOSIS. All rts. reserv.

ABSTRACT: at its restrictive temperature in the presence of exogenous palmitate results in lysis of the %%%bacterium%%%. Under these conditions, palmitate is incorporated into %%%membrane%%% phospholipid to a high level. Mutants of %%%bacteria%%% restricting this incorporation (having a palmitate-resistant phenotype) were isolated and 1 such mutant strain

in its acyltransferase activities. The mutation(s) of strain L8-2/3 appears to allow %%%increased%%% (approx. 2-fold) incorporation of myristate (and possible %%%unsaturated%%% %%%fatty%%% %%%acids%%%) into position 2 of 1-acyl-sn-glycerol 3-phosphate but normal palmitate incorporation into

14/K/9 (Item 7 from file: 5)
DIALOG(R)File 5:(c) 1999 BIOSIS. All rts. reserv.

ABSTRACT: 2.5- to 9.6-fold when the growth medium was supplemented with a saturated %%%unsaturated%%% or beta -hydroxy %%%fatty%%% %%%acid%%%, the greatest %%%increase%%% occurring with palmitic acid. The amount of each supplemented fatty acid found within this organism...

DESCRIPTORS: %%%MEMBRANE%%% FLUIDITY OSMOTIC FRAGILITY %%%BACTERICIDAL%%% ACTIVITY %%%BACTERIOSTATIC%%% ACTIVITY TETRACYCLINE ERYTHROMYCIN ANTIBACTERIAL-DRUG CHOLESTEROL CONTENT HYDROGEN PER OXIDE SECRETION BETA HYDROXY DECANOIC-ACID

14/K/10 (Item 8 from file: 5)
DIALOG(R)File 5:(c) 1999 BIOSIS. All rts. reserv.

ABSTRACT: rabbits, a 10-fold greater number of cells than could be obtained from control rabbits. %%%Increased%%% amounts of %%%unsaturated%%% free %%%fatty%%% %%%acids%%% were present in the lavage lipids of injected rabbits, and no change in the amount

Concentrations of N-formylmethionyl-phenylalanine similar to those which stimulate macrophage chemotaxis and bactericidal activity %%%enhance%%% this fatty acid release. Alveolar macrophages incorporate both saturated and %%%unsaturated%%% %%%fatty%%% %%%acids%%% with similar efficiency, primarily into phospholipids and triacylglycerols. Activation of alveolar macrophages, which results in

DESCRIPTORS: COMPLETE FREUNDS ADJUVANT %%%MEMBRANE%%% COMPONENTS N FORMYL METHIONINE PHENYL ALANINE CHEMO TAXIS %%%BACTERICIDAL%%% ACTIVITY PULMONARY INFLAMMATORY RESPONSE PHOSPHO LIPASE PHOSPHATIDYL CHOLINE TRIACYL GLYCEROL PHOSPHO LIPID BRONCHO ALVEOLAR

14/K/11 (Item 9 from file: 5)
DIALOG(R)File 5:(c) 1999 BIOSIS. All rts. reserv.

ESR STUDIES ON THE %%%MEMBRANE%%% PROPERTIES OF A MODERATELY HALOPHILIC %%%BACTERIUM%%% 2. EFFECT OF EXTREME GROWTH CONDITIONS ON LIPOSOME PROPERTIES

ABSTRACT: in medium containing 0.5 M NaCl had decreased concentrations of these fatty acids with %%%increased%%% concentrations of the corresponding %%%unsaturated%%% %%%fatty%%% %%%acids%%%. The phospholipid composition was affected by the culture conditions: cells grown at 40 degree C...

and order parameters of three spin labels of stearic acid derivatives similar to those of %%%membranes%%% of whole cells of this %%%bacterium%%%. ESR studies showed that the physical properties of the liposomes from the total extractable lipids...

14/K/12 (Item 10 from file: 5)
DIALOG(R)File 5:(c) 1999 BIOSIS. All rts. reserv.

ARCHITECTURE OF THE OUTER %%%MEMBRANE%%% OF ESCHERICHIA-COLI K-12. PHASE TRANSITIONS OF THE %%%BACTERIO%%% PHAGE K-3 RECEPTOR COMPLEX

ABSTRACT: at 12 degree C differs in that in the latter case the amounts of mono-%%%unsaturated%%% %%%fatty%%% %%%acids%%% (mainly palmitoleic acid) are %%%increased%%% at the expense of lauric acid. This difference in fatty acid composition probably explains the

14/K/13 (Item 11 from file: 5)
DIALOG(R)File 5:(c) 1999 BIOSIS. All rts. reserv.

ABSTRACT: by measuring permeability change of lipid bilayer: liposome. Both decrease in the cholesterol content and %%%increase%%% in the content of %%%unsaturated%%% %%%fatty%%% %%%acid%%% moieties in the lipid bilayers: augmented the susceptibility of the liposomes to the mercurial compounds

DESCRIPTORS: ANIMAL %%%BACTERIA%%% LIPID %%%MEMBRANE%%% CHOLESTEROL

14/K/14 (Item 1 from file: 144)
DIALOG(R)File 144:(c) 1999 INIST/CNRS. All rts. reserv.

There is considerable evidence correlating the production of %%%increased%%% proportions of %%%membrane%%% unsaturated %%%fatty%%% %%%acids%%% (UFAs) with %%%bacterial%%% growth at low temperatures or high pressures. In order to assess the importance of UFAs...

?
PLEASE ENTER A COMMAND OR BE LOGGED OFF IN 5 MINUTES
? t **s14/9/3, 5, 6, 7, 8, 9, 12, 13, 14**

14/9/3 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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08048053 BIOSIS NO.: 000093081401
ADAPTATIONAL CHANGES OF FATTY ACID COMPOSITION AND THE PHYSICAL STATE OF MEMBRANE LIPIDS FOLLOWING THE CHANGE OF GROWTH TEMPERATURE IN YERSINIA-ENTEROCOLITICA

AUTHOR: NAGAMACHI E.; SHIBUYA S-I.; HIRAI Y.; MATSUSHITA O.; TOMOCHIKA K-I.; KANEMASA Y.
AUTHOR ADDRESS: DEP. MICROBIOL., OKAYAMA UNIV. MED. SCH., OKAYAMA, OKAYAMA 700, JPN

JOURNAL: MICROBIOL. IMMUNOL. 35 (12): 1991: 1085-1094
FULL JOURNAL NAME: Microbiology and Immunology
CODEN: MIIMD
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Yersinia enterocolitica is capable of growing in a broad range of temperatures from 4 to 45 degree C. How this organism alters its membrane lipids in response to the change of growth temperature is very interesting. The fatty acids of membrane lipids of cells cultured at 5

15, 25 and 37 degree. C were analyzed and the physical states of these %%%membrane%%% lipids were characterized. The major phospholipids of this
%%%bacterium%%% were phosphatidylethanolamine, phosphatidylglycerol, cardiolipin, lysophosphatidylglycerol and lysophosphatidylethanolamine. No significant difference in phospholipid composition in response to culture temperatures was observed. It was reported in our previous paper that the major fatty acids of membrane phospholipids of Y. enterocolitica were C15:0, C16:0, C16:1, cyclopropane C17:0 and C18:0. **Some differences in the fatty acid composition were, however, observed with the change of culture temperature. When the culture temperature was raised, the saturated and cyclopropane %%%fatty%%% %%%acids%%% substantially %%%increased%%% and the %%%unsaturated%%% ones decreased. A reverse phenomenon was observed when culture temperature was lowered. From the viewpoints of membrane physical state, adaptational changes were analyzed using a nylon microcapsule method. Phase transition in membrane lipids of cells grown at each culture temperature took place in the range of about 5 degree. C below and about 10 degree. C above the culture temperature. It is, therefore, considered that Y. enterocolitica maintains its membrane rigidity and fluidity in response to growth temperature by changing the membrane fatty acid composition.**

DESCRIPTORS: PHASE TRANSITION; FLUIDITY; RIGIDITY
CONCEPT CODES:
10066 Biochemical Studies-Lipids
10506 Biophysics-Molecular Properties and Macromolecules
10508 Biophysics-Membrane Phenomena
10614 External Effects-Temperature as a Primary Variable (1971-)
10616 External Effects-Temperature as a Primary Variable-Cold (1971-)
10618 External Effects-Temperature as a Primary Variable-Hot (1971-)
30500 Morphology and Cytology of Bacteria
31000 Physiology and Biochemistry of Bacteria
BIOSYSTEMATIC CODES:
06702 Enterobacteriaceae (1992-)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA):
Microorganisms
Bacteria
Eubacteria

14/9/5 (Item 3 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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05691349 BIOSIS NO.: 000084039754
%%%MEMBRANE%%% LIPIDS OF A PSYCHROPHILIC AND BAROPHILIC DEEP-SEA
%%%BACTERIUM%%%

AUTHOR: WIRSEN C.O.; JANNASCH H.W.; WAKEHAM S.G.; CANUEL E.A.
AUTHOR ADDRESS: WOODS HOLE OCEANOGRAPHIC INST., WOODS HOLE, MASS. 02543.
USA

JOURNAL: CURR MICROBIOL 14 (6): 1987, 319-322
FULL JOURNAL NAME: Current Microbiology
CODEN: CUMID
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: In a psychrophilic and barophilic marine bacterial isolate of the genus Alteromonas, the ratio of total %%%unsaturated%%% versus saturated %%%fatty%%% %%%acids%%% in the membrane lipids %%%increased%%% when the organism was grown at increasing hydrostatic pressure and decreasing temperatures. This regulatory capacity, as well as the presence of relatively large amounts of 20:5 polyunsaturated fatty acid, appear to be functional in maintaining mebrane fluidity within a range of pressures distinctly below and above the specific optimum and at typical deep sea temperatures.

DESCRIPTORS: ALTEROMONAS-SP; UNSATURATED FATTY ACID
SATURATED FATTY ACID
MEMBRANE FLUIDITY
CONCEPT CODES:
07512 Ecology, Environmental Biology-Oceanography
10066 Biochemical Studies-Lipids
10508 Biophysics-Membrane Phenomena
30000 Bacteriology, General and Systematic
30500 Morphology and Cytology of Bacteria
31000 Physiology and Biochemistry of Bacteria
10506 Biophysics-Molecular Properties and Macromolecules
23001 Temperature, Its Measurement, Effects and Regulation-General Measurement and Methods
BIOSYSTEMATIC CODES:
04716 Pseudomonadaceae (1979-)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA):
Microorganisms
Bacteria

14/9/6 (Item 4 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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05531305 BIOSIS NO.: 000083004444
BIOCHEMICAL STUDIES ON MOLECULAR MECHANISM FOR ENVIRONMENTAL ADAPTATION OF
MEMBRANE LIPIDS: ALTERATIONS OF ACYLTRANSFERASE AND PHOSPHOLIPASE
ACTIVITIES IN COLD ACCLIMATION

AUTHOR: YOSHIOKA S.
AUTHOR ADDRESS: DEP. OF BIOCHEMISTRY, GIFU UNIV. SCH. OF MED.

JOURNAL: ACTA SCH MED UNIV GIFU 33 (5): 1985 (RECD. 1986), 763-793
FULL JOURNAL NAME: Acta Scholae Medicinalis Universitatis in Gifu
CODEN: GDIKA
RECORD TYPE: Abstract
LANGUAGE: JAPANESE

ABSTRACT: It is well known that many organisms can modify their fatty acyl chain composition of membrane phospholipids to facilitate survival at altered growth temperature. The molecular mechanisms of fatty acid alteration have been investigated for not only eukaryotic but also prokaryotic cells, but the precise mechanisms remain to be clarified. The ciliated protozoan, Tetrahymena pyriformis (NT-1), with its defined %%%membrane%%% organization and %%%bacteria%%%-like rapid growth has been employed as a suitable model system for studying the thermal acclimation of membrane phospholipids. In the present study, we have attempted to explore the mechanism for the alteration of the fatty acyl composition of membrane phospholipids and characterized the deacylation and reacylation activities after the downward temperature-shift in Tetrahymena pyriformis cells. When 39 degree C-grown Tetrahymena cells were shifted to 15 degree C the relative proportion of %%%unsaturated%%% %%%fatty%%% %%%acids%%%, especially gamma -linolenic acid, was %%%increased%%%, with a compensating decrease of palmitic acid in phospholipids. However, after the shift, the rate of incorporation of [14C]acetate into fatty acids was reduced to less than one-tenth and the principal newly synthesized fatty acid was linoleic acid, and palmitic and gamma -linolenic acids were labeled with [14C]acetate to a nearly same extent. In contrast, when the cells prelabeled with both [32P]Pi and [14C]palmitic acid were shifted to 15 degree C and then linoleic and gamma -linolenic acids were added to the culture, the [14C]/[32P]ratios of major phospholipids were progressively decreased until 5 hr after the shift. These results suggest that preexisting fatty acids associated with membrane phospholipids are deacylated by phospholipase(s) and then reacylated into lysophospholipids after modification to adequate unsaturated fatty acids by desaturation and/or elongation. In order to clarify these two pathways, the reacylation and deacylation enzyme activities were characterized using microsomes and homogenate from Tetrahymena cells. It is to be noted that this alteration of acyl composition was found to occur predominantly at the C-1 position of phospholipids. Microsomes isolated from Tetrahymena cells showed reacylation activities not only for 1-acyl-sn-glycerol-3-phosphorylcholine (1-acyl-GPC) and 1-acyl-sn-glycerol-3-phosphorylethanolamine (1-acyl-GPE) but also for 2-acyl-GPC and 2-acyl-GPE. Both acyltransferases had the different acylation rates for palmitoyl-CoA, oleoyl-CoA, linoleoyl-CoA and gamma -linolenoyl-CoA. However, these specificities for various acyl-CoAs of lysophospholipid acyltransferases were unchanged in the microsomes isolated from the cells grown isothermally at 39 degree C or 15 degree C and the cells shifted from 39 degree C to 15 degree C. In contrast, the ratio of acylating activity of linoleoyl-CoA to palmitoyl-CoA in microsomes from 15 degree C-grown cells was 1.5-3.0 fold higher than in microsomes from 39 degree C-grown cells at 39 degree C and 15 degree C incubation temperature. These results suggest that the changes in substrate (acyl-CoA) specificities of reacylation enzyme activities during temperature acclimation would exert only a small contribution to the %%%increased%%% level of %%%unsaturated%%% %%%fatty%%% %%%acids%%% in phospholipids. In contrast, the reacylating enzymes would partially participate in the %%%increase%%% of %%%unsaturated%%% %%%fatty%%% %%%acid%%% content in 15 degree C-grown cells. On the other hand, the deacylation enzyme, phospholipase A, of Tetrahymena hydrolyzed the fatty acyl chain of the C-1 position of phosphatidylcholine and phosphatidylethanolamine. Temperature dependency of phospholipase A1 activity for phosphatidylcholine and phosphatidylethanolamine was very similar for the homogenates prepared from 39 degree C and 15 degree C-grown cells. However, there was a two-fold increase in these enzyme activities at 7 hr after the downward temperature-shift. The above observations lead us to draw the conclusion for the mechanism of fatty acid alteration in Tetrahymena membranes that when cells are shifted to the lower growth temperature, the deacylation enzyme activity (phospholipase A) is activated and unsaturated fatty acids are reacylated to lysophospholipids by the acyltransferases.

DESCRIPTORS: TETRAHYMENA-PYRIFORMIS; ACETYL COENZYME A; CARBON-14 ACETATE
CONCEPT CODES:
02506 Cytology and Cytochemistry-Animal
10508 Biophysics-Membrane Phenomena
10616 External Effects-Temperature as a Primary Variable-Cold (1971-)
10806 Enzymes-Chemical and Physical

13006 Metabolism-Lipids
23010 Temperature: Its Measurement, Effects and Regulation-Thermoadaptation
64002 Invertebrata, Comparative and Experimental Morphology, Physiology and Pathology-Protozoa
01012 Methods, Materials and Apparatus, General-Photography
06504 Radiation-Radiation and Isotope Techniques
10064 Biochemical Studies-Proteins, Peptides and Amino Acids
10066 Biochemical Studies-Lipids
10802 Enzymes-General and Comparative Studies, Coenzymes
23001 Temperature: Its Measurement, Effects and Regulation-General Measurement and Methods
BIOSYSTEMATIC CODES
35100 Ciliata
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA)
Microorganisms
Animals
Invertebrates
Protozoans

14/9/7 (Item 5 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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04694847 BIOSIS NO.: 000079107976
%%%BACTERIAL%%% %%%MEMBRANES%%% AND LIPID PACKING THEORY

AUTHOR: GOLDFINE H
AUTHOR ADDRESS: DEPARTMENT OF MICROBIOLOGY, SCHOOL OF MEDICINE, UNIVERSITY OF PENNSYLVANIA, PHILADELPHIA, PA 19104

JOURNAL: J LIPID RES 25 (13): 1984 (RECD 1985): 1501-1507
FULL JOURNAL NAME: Journal of Lipid Research
CODEN: JLPRA
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Recent physical studies on the lipids of biological membranes have emphasized the potential instability of the lamellar phase of mixtures of lipids containing unsaturated species of phosphatidylethanolamine [PE], plasmenylethanolamine or monoglycosyldiacylglycerols, all of which are important constituents of the %%%membranes%%% of different groups of prokaryotes. The polar lipid compositions of %%%bacteria%%% are examined in terms of lipid packing theory. This survey reveals that gram-negative species with high proportions of unsaturated fatty acids (> 65%) often have phosphatidylcholine (PC) in addition to the more common PE, phosphatidylglycerol and cardiolipin. Physical studies have shown that PC is capable of inducing the bilayer phase when added to unsaturated PE. Many bacteria that are rich in unsaturated fatty acids and contain PC have intracytoplasmic membrane systems (ICM), and the potential role of bilayer instability in the formation of ICM is discussed. Two groups of bacteria that are either natural fatty acid auxotrophs or utilize exogenous fatty acids when endogenous synthesis is inhibited, Acholeplasma laidlawii and the butyric acid-producing clostridia, are capable of adjusting their lipid class compositions according to the degree of unsaturation of their lipid aliphatic chains. Lipid class composition is also affected by growth temperature in both groups of organisms, and by incorporation of cholesterol in A. laidlawii. As the content of cis-%%%unsaturated%%% %%%fatty%%% %%%acids%%% or temperature is %%%increased%%%, lipids that form an unstable lamellar phase at physiological temperatures are replaced with lipids that have larger effective polar head groups, and can therefore form more stable bilayers

DESCRIPTORS: ACHOLEPLASMA-LAIDLAWII GRAM-NEGATIVE SPECIES BUTYRIC-ACID-PRODUCING CLOSTRIDIA PHOSPHATIDYLETHANOLAMINE PHOSPHATIDYLCHOLINE CARDIOLIPIN PHOSPHATIDYLGLYCEROL LAMELLAR PHASE
CONCEPT CODES
10066 Biochemical Studies-Lipids
10506 Biophysics-Molecular Properties and Macromolecules
10508 Biophysics-Membrane Phenomena
13006 Metabolism-Lipids
30500 Morphology and Cytology of Bacteria
31000 Physiology and Biochemistry of Bacteria
10069 Biochemical Studies-Minerals
10504 Biophysics-General Biophysical Techniques
10614 External Effects-Temperature as a Primary Variable (1971-)
13008 Metabolism-Sterols and Steroids
BIOSYSTEMATIC CODES:
05619 Bacillaceae (1979-)
09110 Acholeplasmataceae (1979-)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA)
Microorganisms
Bacteria

14/9/8 (Item 6 from file: 5)
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04244457 BIOSIS NO.: 000077070502
ALTERED ACYL TRANSFERASE ACTIVITY IN ESCHERICHIA-COLI ASSOCIATED WITH MUTATIONS IN ACYL COENZYME A SYNTHETASE EC-6.2.1.3

AUTHOR: GREENWAY D. L. A.; SILBERT D. F.
AUTHOR ADDRESS: MICROBIOL. DEP., LIFE SCI. BUILD., UNIV. LIVERPOOL, P.O. BOX 147, LIVERPOOL L69 3BX, ENGLAND

JOURNAL: J BIOL CHEM 258 (21): 1983: 13034-13042
FULL JOURNAL NAME: Journal of Biological Chemistry
CODEN: JBCHA
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Growth of a temperature-sensitive general fatty acid synthesis mutant of E. coli K12 at its restrictive temperature in the presence of exogenous palmitate results in lysis of the %%%bacterium%%%. Under these conditions, palmitate is incorporated into %%%membrane%%% phospholipid to a high level. Mutants of %%%bacteria%%% restricting this incorporation (having a palmitate-resistant phenotype) were isolated and 1 such mutant strain L8-2/3, was further characterized. This mutant has lowered acyl-CoA synthetase (fadD) activity (25-33% of normal) and consequently is defective in fatty acid uptake. This lowered uptake could explain the palmitate-resistant phenotype of strain L8-2/3. However, in vivo (fatty acid composition and positional distribution data) and in vitro (acyltransferase activity measurements) experiments suggest that this mutant is also altered in its acyltransferase activities. The mutation(s) of strain L8-2/3 appears to allow %%%increased%%% (approx. 2-fold) incorporation of myristate (and possible %%%unsaturated%%% %%%fatty%%% %%%acids%%%) into position 2 of 1-acyl-sn-glycerol 3-phosphate but normal palmitate incorporation into the same position. The incorporation of palmitate, myristate and oleate into position 1 of sn-glycerol 3-phosphate by strain L8-2/3 is also higher than that observed with the parent strain L8-2. Replacing the partially defective fadD gene of strain L8-2/3 with a wild type allele conferred on this strain of the palmitate sensitivity and the acyltransferase activity of the parent strain L8-2. Thus, acyl-CoA synthetase evidently interacts with the acyltransferase(s) in some manner to influence the fatty acid specificity of the acyltransferase

DESCRIPTORS: FAD-D GENE FATTY-ACID SPECIFICITY PALMITATE MYRISTATE OLEATE 1 ACYL-SN GLYCEROL 3 PHOSPHATE
CONCEPT CODES
10802 Enzymes-General and Comparative Studies, Coenzymes
10806 Enzymes-Chemical and Physical
13006 Metabolism-Lipids
31000 Physiology and Biochemistry of Bacteria
31500 Genetics of Bacteria and Viruses
10062 Biochemical Studies-Nucleic Acids, Purines and Pyrimidines
10066 Biochemical Studies-Lipids
10508 Biophysics-Membrane Phenomena
10614 External Effects-Temperature as a Primary Variable (1971-)
23001 Temperature: Its Measurement, Effects and Regulation-General Measurement and Methods
30500 Morphology and Cytology of Bacteria
32000 Microbiological Apparatus, Methods and Media
BIOSYSTEMATIC CODES
04810 Enterobacteriaceae (1979-)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA)
Microorganisms
Bacteria

14/9/9 (Item 7 from file: 5)
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03355260 BIOSIS NO.: 000072083364
LONG CHAIN FATTY-ACID PERTURBATIONS IN MYCOPLASMA-PNEUMONIAE

AUTHOR: LEON O; PANOS C
AUTHOR ADDRESS: DEP. MICROBIOL., JEFFERSON MED. COLLEGE THOMAS JEFFERSON UNIV., PHILADELPHIA, PENNSYLVANIA 19107

JOURNAL: J BACTERIOL 146 (3): 1981: 1124-1134
FULL JOURNAL NAME: Journal of Bacteriology
CODEN: JOBAA
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: The fatty acid content of M. pneumoniae increased 2.5- to 9.6-fold when the growth medium was supplemented with a saturated %%%unsaturated%%% or beta-hydroxy %%%fatty%%% %%%acid%%%, the greatest

%%%increase%%% occurring with palmitic acid. The amount of each supplemented fatty acid found within this organism was 2.8-5.5% of the total fatty acid content; the exception was palmitic acid. Up to 57% of the palmitic acid was utilized from the supplemented medium; only 0.2-10% of the other fatty acids was utilized. Chromatographic and isotopic analyses revealed that 22% of the labeled palmitic acid incorporated from the palmitic acid-supplemented medium remained free in this organism. Although complex lipid synthesis increased a minimum of 3.8-fold under these conditions, this mycoplasma continued to incorporate intact complex lipids from the growth medium. Bacteriostatic and bactericidal studies which used high concentrations of various long-chain fatty acids showed that only palmitic, myristic and beta -hydroxydecanoic acids were not bactericidal. The addition of palmitic acid to the growth medium resulted in the formation of exceedingly long, filamentous cells in approx. 25% of the population. **Osmotic fragility and ESR spectroscopy studies showed a correlation among this increased fatty acid content, decreased membrane fluidity and the increased osmotic fragility of palmitic acid-grown cells.** The cells also had a lowered cholesterol content. **The effect** of such compositional changes on osmotic fragility is discussed. The profound increase in the total fatty acid content of palmitic acid-grown cells did not alter sensitivity to tetracycline or erythromycin or the amount of H_2O_2 secreted.

DESCRIPTORS: %%%MEMBRANE%%% FLUIDITY OSMOTIC FRAGILITY %%%BACTERICIDAL%%% ACTIVITY %%%BACTERIOSTATIC%%% ACTIVITY TETRACYCLINE ERYTHROMYCIN ANTIBACTERIAL-DRUG CHOLESTEROL CONTENT HYDROGEN PEROXIDE SECRETION BETA HYDROXY DECANOIC-ACID MYRISTIC-ACID PALMITIC-ACID COMPLEX LIPID SYNTHESIS
CONCEPT CODES:
10508 Biophysics-Membrane Phenomena
13002 Metabolism-General Metabolism, Metabolic Pathways
13006 Metabolism-Lipids
13008 Metabolism-Sterols and Steroids
22501 Toxicology-General, Methods and Experimental
31000 Physiology and Biochemistry of Bacteria
06504 Radiation-Radiation and Isotope Techniques
10011 Biochemistry-Physiological Water Studies (1970-)
10056 Biochemical Methods-Lipids
10060 Biochemical Studies-General
10066 Biochemical Studies-Lipids
10067 Biochemical Studies-Sterols and Steroids
10504 Biophysics-General Biophysical Techniques
12100 Movement (1971-)
13222 Nutrition-Lipids (1972-)
22002 Pharmacology-General
30500 Morphology and Cytology of Bacteria
32000 Microbiological Apparatus, Methods and Media
38504 Chemotherapy-Antibacterial Agents
BIOSYSTEMATIC CODES:
09112 Mycoplasmataceae (1979-)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA):
Microorganisms
Bacteria

14/9/12 (Item 10 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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02950708 BIOSIS NO.: 000069058826
ARCHITECTURE OF THE OUTER %%%MEMBRANE%%% OF ESCHERICHIA-COLI K-12 PHASE TRANSITIONS OF THE %%%BACTERIO%%% PHAGE K-3 RECEPTOR COMPLEX

AUTHOR: VAN ALPHEN L.; LUGTENBERG B.; RIETSCHEL E.T.; MOMBERS C.
AUTHOR ADDRESS: LAB. MOL. CELBIOL., RIJKSUNIV. UTR., UNIV. CENT. DE UITHOF, TRANSITORIUM 3, PADUALAAN 8, NL-3584 CHUTRECHT, NETH.

JOURNAL: EUR. J. BIOCHEM. 101 (2): 1979 (RECD. 1980): 571-580
FULL JOURNAL NAME: European Journal of Biochemistry
CODEN: EJBCA
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: The adsorption constant of the irreversible adsorption of the bacteriophage K3 to E. coli K12 bacteria is strongly dependent on the incubation temperature. Two inflection points are observed in an Arrhenius plot. For cells grown at 37 degree. C the inflection points are found at 20 degree. C and 28 degree. C, whereas these inflection points shift to 10 degree. C and 19 degree. C for cells grown at 12 degree. C. To study the lipid environment of the receptor, the temperature dependence of the inactivation of bacteriophage K3 was measured in vitro in the presence of various lipids. The Arrhenius plots of the rate of inactivation of phage K3 by complexes of protein d and lipopolysaccharide are very similar to those observed for whole cells. With lipopolysaccharide isolated from cells grown at 37 degree. C inflection points are observed at 20 degree. C and 28 degree. C. With lipopolysaccharide from cells grown at 12 degree. C the inflection points are found at 10 degree. C and 21 degree. C. The environment of protein d in vivo can be mimicked perfectly in vitro by protein d/lipopolysaccharide complexes. **The fatty acid composition of lipopolysaccharide isolated from cells grown at 37 degree. C and at 12 degree. C differs in that in the latter case the amounts of mono-%%%unsaturated%%% %%%fatty%%% %%%acids%%%** (mainly palmitoleic acid) **are %%%increased%%% at the expense of lauric acid. This difference** in fatty **acid composition probably explains the difference** in the phase transition **temperatures caused by the 2 lipopolysaccharide preparations.** A transition at the inflection point of the highest temperature is also found for lipopolysaccharide using light-scattering measurements and appears to be a thermal transition, since it is also observed in differential scanning calorimetry. Cells of mutant strain CE1071 lacking outer membrane proteins b and c and concomitantly containing phospholipids in the outer leaflet of the outer membrane, adsorb phage K3 with an almost normal rate, but the shape of the Arrhenius plot differs from the curve of wild-type cells. The characteristics of the adsorption of phage K3 to these mutant cells can be mimicked in vitro by the incorporation of phospholipid into protein d/lipopolysaccharide complexes, indicating that phospholipids are part of the environment of the phage K3 receptor in cells of this mutant, but not in wild-type cells.

DESCRIPTORS: PHAGE K-3 LIPID PROTEIN LIPO POLY SACCHARIDE
CONCEPT CODES:
10064 Biochemical Studies-Proteins, Peptides and Amino Acids
10066 Biochemical Studies-Lipids
10068 Biochemical Studies-Carbohydrates
10506 Biophysics-Molecular Properties and Macromolecules
30500 Morphology and Cytology of Bacteria
31000 Physiology and Biochemistry of Bacteria
32300 Microbiological Ultrastructure (1972-)
33504 Virology-Bacteriophage
10010 Comparative Biochemistry, General
10054 Biochemical Methods-Proteins, Peptides and Amino Acids
10056 Biochemical Methods-Lipids
10058 Biochemical Methods-Carbohydrates
10614 External Effects-Temperature as a Primary Variable (1971-)
10618 External Effects-Temperature as a Primary Variable-Hot (1971-)
23001 Temperature: Its Measurement, Effects and Regulation-General Measurement and Methods
31500 Genetics of Bacteria and Viruses
32000 Microbiological Apparatus, Methods and Media
BIOSYSTEMATIC CODES:
02100 Bacterial Viruses (1979-80)
04810 Enterobacteriaceae (1979-)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA):
Microorganisms
Viruses
Bacteria

14/9/13 (Item 11 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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02637612 BIOSIS NO.: 000067025674
CHANGE IN PERMEABILITY OF LIPOSOMES CAUSED BY METHYL MERCURY AND INORGANIC MERCURY

AUTHOR: NAKADA S.; INOUE K.; NOJIMA S.; IMURA N.
AUTHOR ADDRESS: SCH. PHARM. SCI., KITASATO UNIV., 9-1 SHIROKANE 5 CHOME, MINATO, TOKYO 108, JPN.

JOURNAL: CHEM-BIOL. INTERACT. 22 (1): 1978 15-24
FULL JOURNAL NAME: Chemico-Biological Interactions
CODEN: CBINA
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: The effects of 2 mercurial compounds, methyl mercury and inorganic Hg, on animal and bacterial lipids were examined by measuring permeability change of lipid bilayer, liposome. **Both decrease in the cholesterol content and %%%increase%%% in the content of %%%unsaturated%%% %%%fatty%%% %%%acid%%%** moieties in the lipid **bilayers.** augmented the susceptibility of the liposomes to the mercurial compounds. Inorganic Hg and methylmercury disrupted the lipid membrane to essentially the same extent. The influence on the permeability seems to be specific for Hg compounds. The significant increase in the permeability of some liposomal preparation noted even at the mercurial concentration of 10-7 M suggests that lipids in biomembranes may be one of the primary targets of these toxic substances.

DESCRIPTORS: ANIMAL %%%BACTERIA%%% LIPID %%%MEMBRANE%%% CHOLESTEROL
CONCEPT CODES:
02506 Cytology and Cytochemistry-Animal
10508 Biophysics-Membrane Phenomena
13006 Metabolism-Lipids

13008 Metabolism-Sterols and Steroids
22501 Toxicology-General, Methods and Experimental
30500 Morphology and Cytology of Bacteria
10066 Biochemical Studies-Lipids
10067 Biochemical Studies-Sterols and Steroids
10069 Biochemical Studies-Minerals
10506 Biophysics-Molecular Properties and Macromolecules
12100 Movement (1971-)
22506 Toxicology-Environmental and Industrial Toxicology
BIOSYSTEMATIC CODES
04000 Bacteria-Unspecified (1979-)
33000 Animalia-Unspecified
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA)
Microorganisms
Bacteria
Animals

14/9/14 (Item 1 from file: 144)
DIALOG(R)File 144 Pascal
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14096535 PASCAL No.: 99-0290202
Monounsaturated but not polyunsaturated fatty acids are required for growth of the deep-sea bacterium Photobacterium profundum SS9 at high pressure and low temperature
ALLEN E. E; FACCIOTTI D; BARTLETT D. H
Center for Marine Biotechnology and Biomedicine, Scripps Institution of Oceanography, University of California, San Diego, La Jolla, California 92093-0202, United States, Calgene LLC, Monsanto, Davis, California 95616, United States
Journal: Applied and environmental microbiology, 1999, 65 (4) 1710-1720
ISSN: 0099-2240, CODEN: AEMIDF, Availability: INIST-7195, 354000083479250500
No. of Refs.: 61 ref.
Document Type: P (Serial), A (Analytic)
Country of Publication: United States
Language: English
There is considerable evidence correlating the production of %%%increased%%% proportions of %%%membrane%%% unsaturated %%%fatty%%% %%%acids%%% (UFAs) with %%%bacterial%%% growth at low temperatures or high pressures. In order to assess the importance of UFAs to microbial growth under these conditions, the effects of conditions altering UFA levels in the psychrotolerant piezophilic deep-sea bacterium Photobacterium profundum SS9 were investigated. The fatty acids produced by P. profundum SS9 grown at various temperatures and pressures were characterized, and differences in fatty acid composition as a function of phase growth, and between inner and outer membranes, were noted. P. profundum SS9 was found to exhibit enhanced proportions of both monounsaturated (MUFAs) and polyunsaturated (PUFAs) fatty acids when grown at a decreased temperature or elevated pressure. Treatment of cells with cerulenin inhibited MUFA but not PUFA synthesis and led to a decreased growth rate and yield at low temperature and high pressure. In addition, oleic acid-auxotrophic mutants were isolated. One of these mutants, strain EA3, was deficient in the production of MUFAs and was both low-temperature sensitive and high-pressure sensitive in the absence of exogenous 18:1 fatty acid. Another mutant, strain EA2, produced little MUFA but elevated levels of the PUFA species eicosapentaenoic acid (EPA, 20:5n-3). This mutant grew slowly but was not low-temperature sensitive or high-pressure sensitive. Finally, reverse genetics was employed to construct a mutant unable to produce EPA. This mutant, strain EA10, was also not low-temperature sensitive or high-pressure sensitive. The significance of these results to the understanding of the role of UFAs in growth under low-temperature or high-pressure conditions is discussed.
English Descriptors: Marine environment; Ocean floors; Microorganism culture; Unsaturated fatty acid; Microorganism growth; Mutation; Low temperature; High pressure; Chemical composition; Plasma membrane; Comparative study
Broad Descriptors: Bacteria; Bacterie; Bacteria
French Descriptors: Milieu marin; Fond marin; Culture microorganisme; Acide gras insature; Multiplication microorganisme; Mutation; Basse temperature; Haute pression; Composition chimique; Membrane plasmique; Etude comparative; Phytobacterium profundum; Psychrotolerance
Classification Codes: 002A05B03

?rds

Set Items Description
S1 1871321 BACTER?
S2 0 MEMBRANE#
S3 1452758 MEMBRANE?
S4 0 S1 (10N) S2
S5 26356 S1 (10N) S3
S6 3058102 INCREAS? OR ENHANC?
S7 607785 FLUID?
S8 26248 S6 (10N) S7
S9 15 S5 (10N) S8
S10 10 RD S9 (unique items)
S11 18323 UNSATURATED (5N) FATTY (W) ACID?
S12 1620 S6 (10N) S11
S13 17 S12 AND S5
S14 14 RD S13 (unique items)
? s s12 and s6 and transform?

1620 S12
3058102 S6
600341 TRANSFORM?
S15 27 S12 AND S6 AND TRANSFORM?
? rd s27

>>>Set 27 has not yet been created.
? rd s15

completed examining records
S16 17 RD S15 (unique items)
? t s16/9/1-17

16/9/1 (Item 1 from file: 55)
DIALOG(R)File 55:Biosis Previews(R)
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12031719 BIOSIS NO.: 199900312238
%%%Enhancement%%% of propylene glycol distribution in the skin by high purity cis-unsaturated fatty acids with different alkyl chain lengths having different double bond position.
AUTHOR: Taguchi Kenji(a); Fukushima Shoji; Yamaoka Yumiko; Takeuchi Yoshikazu; Suzuki Masao
AUTHOR ADDRESS: (a)Department of Pharmaceutics, Faculty of Pharmaceutical Sciences, Kobe Gakuin University, Arise 5, Japan.
JOURNAL: Biological & Pharmaceutical Bulletin, 22 (4) p407-411, April, 1999
ISSN: 0918-6158
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English
ABSTRACT: %%%Enhancement%%% of skin distribution of propylene glycol (PG) in the skin by high purity cis-unsaturated fatty acids with different alkyl chain lengths was studied in the rat using Fourier %%%transform%%% /attenuated total reflection (FT-IR/ATR) analysis. Two fatty acids with the double bond at the DELTA9 position, palmitoleic acid (omega7, DELTA9) and oleic acid (omega9, DELTA9), %%%enhanced%%% PG flux into the dermis and %%%increased%%% the dermal steady state level of PG. In contrast, myristoleic acid (omega5, DELTA9) was extremely weak in its action. A positional effect of the omega chain was observed. The rate of skin structural alteration %%%increased%%% in proportion to omega chain length. The application of three fatty acids with the double bond at the omega9 position, oleic acid (omega9, DELTA9), gondoic acid (omega9, DELTA11), erucic acid (omega9, DELTA13) %%%enhanced%%% PG distribution in the skin. While, nervonic acid (omega9, DELTA15) did not %%%increase%%% PG distribution in the skin. The relationship of the DELTA/omega ratio to parameters characterizing the action of %%%enhancers%%% (PGpeak area, Tmax alteration, and the slope) suggest that skin distribution %%%increases%%% as the position of the double bond is shifted toward the hydrophilic end. It is therefore likely that the ratio of the DELTA/omega chain length of the cis-%%%unsaturated%%% %%%fatty%%% %%%acid%%% determines the efficacy of these compounds as skin penetration %%%enhancers%%%. An adequate molecular volume may be required for cis-%%%unsaturated%%% %%%fatty%%% %%%acids%%% to act as %%%enhancers%%%
REGISTRY NUMBERS: 57-55-6, PROPYLENE GLYCOL; 373-49-9, PALMITOLEIC ACID; 112-80-1, OLEIC ACID; 5561-99-9, GONDOIC ACID; 112-86-7, ERUCIC ACID; 506-37-6, NERVONIC ACID
DESCRIPTORS:
MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Integumentary System (Chemical Coordination and Homeostasis)
BIOSYSTEMATIC NAMES: Muridae--Rodentia, Mammalia, Vertebrata, Chordata, Animalia
ORGANISMS: rat (Muridae)
ORGANISMS, PARTS, ETC.: skin--integumentary system
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Animals, Chordates, Mammals, Nonhuman Mammals, Nonhuman Vertebrates, Rodents, Vertebrates
CHEMICALS & BIOCHEMICALS: erucic acid, gondoic acid, high purity cis-unsaturated fatty acids, nervonic acid, oleic acid, palmitoleic acid, propylene glycol

METHODS & EQUIPMENT: Fourier %%%transform%%%/attenuated total reflection
analysis--analytical method
CONCEPT CODES:
10060 Biochemical Studies-General
18501 Integumentary System-General, Methods
BIOSYSTEMATIC CODES:
86375 Muridae

16/9/2 (Item 2 from file: 55)
DIALOG(R)File 55:Biosis Previews(R)
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10787242 BIOSIS NO.: 199799408387
%%%Transformation%%% of sterols by Mycobacterium vaccae: Effect of lecithin
on the permeability of cell envelopes to sterols

AUTHOR: Rumijowska A; Lisowka K; Ziolkowski A; Sedlaczek L(a)
AUTHOR ADDRESS: (a)Microbiol. Virol. Cent. Pol. Acad. Sci., Lodowa 106, 93-232 Lodz, Poland

JOURNAL: World Journal of Microbiology & Biotechnology, 13 (1), p89-95, 1997
ISSN: 0959-3993
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: An %%%enhancement%%% of beta-sitosterol %%%transformation%%% to androstendione by Mycobacterium vaccae observed in medium containing egg-yolk lecithin, was associated with the incorporation of a considerable amount of lecithin into the cell envelope lipids. By CC/MS measurements, fatty acids ranging from 14 to 22 carbon atoms were identified in the lipids removed from the cells by organic solvents. Octadecenoic (18:1), 2-methyl-octadecenoic (2-Me 18:1), and hexadecanoic (16:0) acids were the major components of the lipid preparation obtained from both the control cells, and the cells grown in lecithin-containing medium. However, in the fatty acid pattern of the latter a distinct %%%increase%%% in the C-18:1 component, concomitant with the decrease in the 2-Me 18:1 fatty acid was demonstrated. The C-16 fatty acid fraction also showed a higher content of methyl-branched components in the control cell preparation. The enrichment in %%%unsaturated%%% %%%fatty%%% %%%acids%%% %%%increases%%% fluidity of lipids, whereas the decrease in methyl-branched fatty acids may affect the conformation of the surface lipidic components, which may result in %%%enhanced%%% sterol penetration through the cell wall barrier in the presence of lecithin.
REGISTRY NUMBERS: 83-46-5: BETA-SITOSTEROL; 63-05-8: ANDROSTENEDIONE; 25764-26-1Q: OCTADECENOIC ACID; 27104-13-8Q: OCTADECENOIC ACID; 57-10-3: HEXADECANOIC ACID

DESCRIPTORS:
MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Endocrine System (Chemical Coordination and Homeostasis); Methods and Techniques; Pharmacology; Physiology
BIOSYSTEMATIC NAMES: Bacteria-General Unspecified--Eubacteria, Bacteria; Mycobacteriaceae--Eubacteria, Bacteria
ORGANISMS: bacteria (Bacteria - General Unspecified); microorganism (Microorganisms - Unspecified); Mycobacterium vaccae (Mycobacteriaceae)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): bacteria; eubacteria; microorganisms
CHEMICALS & BIOCHEMICALS: BETA-SITOSTEROL; ANDROSTENEDIONE; OCTADECENOIC ACID; HEXADECANOIC ACID
MISCELLANEOUS TERMS: Research Article; ANALYTICAL METHOD; ANDROSTENEDIONE; BETA-SITOSTEROL; BIOBUSINESS; BIOPROCESS ENGINEERING; CELL ENVELOPE; CELL WALL; FATTY ACIDS; GAS CHROMATOGRAPHY/MASS SPECTROMETRY; GC/MS; HEXADECANOIC ACID; LECITHIN; LIPID LIPIDS; MEMBRANES; OCTADECENOIC ACID; ORGANIC SOLVENTS; STEROL PERMEABILITY; STEROLS; STRAIN-NRRL B-3805; %%%TRANSFORMATION%%%; 2-METHYL-OCTADECENOIC ACID
CONCEPT CODES:
10066 Biochemical Studies-Lipids
10067 Biochemical Studies-Sterols and Steroids
13004 Endocrine System-Adrenals
22016 Pharmacology-Endocrine System
31000 Physiology and Biochemistry of Bacteria
32000 Microbiological Apparatus, Methods and Media
32004 Food and Industrial Microbiology-Antibiotics, Biologics, Other Agents
BIOSYSTEMATIC CODES:
08881 Mycobacteriaceae (1992-)

16/9/3 (Item 3 from file: 55)
DIALOG(R)File 55:Biosis Previews(R)
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10748580 BIOSIS NO.: 199799369725
%%%Enhancing%%% effects of %%%unsaturated%%% %%%fatty%%% %%%acids%%% with various structures on the permeation of indomethacin through rat skin

AUTHOR: Morimoto Kazuhiro(a); Tojima Hideki; Haruta Tatsuo; Suzuki Masao; Kakemi Masawo
AUTHOR ADDRESS: (a)Dep. Pharmaceutics, Osaka Univ. Pharmaceutical Sci., 4-20-1 Nasahara, Takatsuki-City, Osaka 569-, Japan

JOURNAL: Journal of Pharmacy and Pharmacology, 48 (11), p1133-1137, 1996
ISSN: 0022-3573
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Effects of straight-chain, cis-type, unsaturated fatty acids with various structures (alkyl chain lengths, numbers of double bonds, position of double bonds and cis- and trans-positional isomers) on the skin permeation of indomethacin were examined by using rat skins in-vitro. Furthermore, the disordering degrees of the intercellular lipid domain in the stratum corneum, which were treated with preparations of unsaturated fatty acids, were measured by the Fourier %%%transform%%% infrared (FT-IR) method using excised rabbit ear skins. %%%Unsaturated%%% %%%fatty%%% %%%acids%%% %%%enhanced%%% the permeation of indomethacin through rat skins. These permeation-%%%enhancing%%% effects by %%%unsaturated%%% %%%fatty%%% %%%acids%%% were affected by changes of their alkyl chain length from C-14 to C-22. The lag-times on the permeation of indomethacin were shortened by unsaturated fatty acids in the following order: C-20 = C-18 = C-22 lt C-16 lt C-14. These fluxes were %%%increased%%% by %%%unsaturated%%% %%%fatty%%% %%%acids%%% in the following order: C-20 gt C-22 = C-18 = C-16 gt C-14. Therefore, gondoic acid (cis-11-eicosenoic acid; C-20H-38O-2) mostly %%%enhanced%%% the skin permeation of indomethacin. However, the %%%enhancing%%% effects of %%%unsaturated%%% %%%fatty%%% %%%acids%%% (C-18 chain) were not affected by their differences of position and numbers of double bonds. spectra of the fatty acid-treated stratum corneum. Therefore, the perturbation %%%increase%%% of lipid domain in the stratum corneum by these fatty acids probably was the cause of the %%%enhancing%%% effects of permeation of indomethacin.
REGISTRY NUMBERS: 53-86-1: INDOMETHACIN

DESCRIPTORS:
MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Integumentary System (Chemical Coordination and Homeostasis); Methods and Techniques; Pharmacology
BIOSYSTEMATIC NAMES: Muridae--Rodentia, Mammalia, Vertebrata, Chordata, Animalia
ORGANISMS: rat (Muridae)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): animals, chordates, mammals; nonhuman mammals; nonhuman vertebrates; rodents; vertebrates
CHEMICALS & BIOCHEMICALS: INDOMETHACIN
MISCELLANEOUS TERMS: Research Article; ANALYTICAL METHOD; FOURIER %%%TRANSFORM%%% IR; INDOMETHACIN; INTEGUMENTARY SYSTEM LIPID DOMAIN; PERMEATION; PHARMACODYNAMICS; PHARMACOLOGY; SKIN STRATUM CORNEUM; TRANSDERMAL DRUG DELIVERY; UNSATURATED FATTY ACIDS
CONCEPT CODES:
10060 Biochemical Studies-General
10066 Biochemical Studies-Lipids
10506 Biophysics-Molecular Properties and Macromolecules
18501 Integumentary System-General, Methods
18504 Integumentary System-Physiology and Biochemistry
22002 Pharmacology-General
22100 Routes of Immunization, Infection and Therapy
BIOSYSTEMATIC CODES:
86375 Muridae

16/9/4 (Item 4 from file: 55)
DIALOG(R)File 55:Biosis Previews(R)
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10153489 BIOSIS NO.: 199698608407
Apparent pK-a of the fatty acids within ordered mixtures of model human stratum corneum lipids.

AUTHOR: Lieckfeldt Renate; Villalain Jose; Gomez-Fernandez Juan-Carlos; Lee

Geoffrey(a)
AUTHOR ADDRESS: (a)Lehrstuhl Pharmazeutische Technologie, Univ Erlangen-Nuernberg, Cauerstr 4, 91058 Erlangen, Germany

JOURNAL: Pharmaceutical Research (New York) 12 (11) p1614-1617 1995
ISSN: 0724-8741
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Purpose: The apparent pK-a of the fatty acids within hydrated (30% w/w) model human stratum corneum (SC) lipid mixtures should be measured. Methods: The degree of ionisation of the fatty acids was calculated as a function of pH using Fourier %%%transform%%% infra-red spectroscopy. The relative intensity of the stretching bands of the unionized and ionized carboxylic groups was determined and fitted to the relevant expression for ionic equilibrium of a monoprotic acid. The pK-a was then calculated for %%%increasing%%% proportion of %%%unsaturated%%% %%%fatty%%% %%%acid%%% in the lipid mixture. Results: Values for pK-a in the range 6.2-7.3 were found. %%%increasing%%% with greater proportion of oleic acid. These are some 1.5-3 pH units higher than the pK-as of fatty acids in molecular solution. Conclusions: As there exists a pH-gradient across the SC, the degree of ionisation will also vary. In the innermost SC layers, a pH of 7 will produce 90% ionization of the fatty acids and head-group repulsion will be great. At the SC surface, the pH of 5 will cause almost minimal head-group repulsion, tending to %%%increase%%% crystallinity and promote a bilayer structure.

DESCRIPTORS:
MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Integumentary System (Chemical Coordination and Homeostasis); Mathematical Biology (Computational Biology); Membranes (Cell Biology)
BIOSYSTEMATIC NAMES: Hominidae--Primates; Mammalia; Vertebrata; Chordata; Animalia
ORGANISMS: Hominidae (Hominidae)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): animals; chordates; humans; mammals; primates; vertebrates
MISCELLANEOUS TERMS: MATHEMATICAL MODEL
CONCEPT CODES:
04500 Mathematical Biology and Statistical Methods
10066 Biochemical Studies-Lipids
10508 Biophysics-Membrane Phenomena
18504 Integumentary System-Physiology and Biochemistry
BIOSYSTEMATIC CODES:
86215 Hominidae

16/9/5 (Item 5 from file: 55)
DIALOG(R)File 55:Biosis Previews(R)
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09872050 BIOSIS NO.: 199598326968
Time-course changes in content and fatty acid composition of phosphatidic acid from rat thymocytes during concanavalin A stimulation.

AUTHOR: El Bawab Samer; Macovschi Olga(a); Lagarde Michel; Prigent Ann e-France
AUTHOR ADDRESS: (a)INSERM Unite 352, Lab. Chimie Biol. INSA-Lyon 20 Ave. Albert Einstein 69621 Villeurbanne, France

JOURNAL: Biochemical Journal 308 (1) p113-118 1995
ISSN: 0264-6021
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Several studies have shown the potential role of phosphatidic acid (PA) as a second messenger in different cell types. Thus, PA has been shown to mimic physiological agonists leading to various cellular responses, such as neurotransmitter and hormone release, cell proliferation by modulating DNA or RNA synthesis, the expression of several proto-oncogenes and growth factors, and the stimulation of enzyme activities such as phospholipase C (PLC), protein kinases and cyclic AMP (cAMP) phosphodiesterase. Stimulation of (3H) arachidonate-labelled rat thymocytes with the mitogen lectin concanavalin A (con A) resulted in %%%enhanced%%% production of radiolabelled PA after only 5 min of activation. The radiolabelled PA %%%increase%%% corresponded to a real %%%increase%%% in PA mass as determined by GLC quantification of its fatty acid content. In the presence of ethanol (0.5%), formation of phosphatidylethanol was not observed after 5 min of con A activation. Pretreatment of cells with R 59022 (10 mu-M), a diacylglycerol (DAG) kinase inhibitor, showed an inhibition in the formation of radiolabelled PA and in PA mass. These results suggest that the PLC-DAG kinase may be the pathway for PA synthesis in the first minutes of mitogenic thymocyte activation. A detailed analysis of the fatty acid composition showed that the relative amount of %%%unsaturated%%% %%%fatty%%% %%%acids%%% was %%%increased%%% in PA from stimulated cells concomitantly with a decrease in saturated ones, in particular, arachidonic acid was %%%increased%%% approximately 2-fold only 2 min after con A addition whereas palmitic acid was decreased for the whole period investigated (20 min). These changes favour the hydrolysis of phosphoinositides rather than phosphatidylcholines by PLC. As PA remains a minor phospholipid, these changes are unlikely to affect cell membrane fluidity, but PA being now well recognized as a potential second messenger, its %%%increased%%% content as well as its %%%increased%%% unsaturation in the fatty acyl moiety might modulate several signalling pathways or the activity of enzymes such as cyclic nucleotide phosphodiesterase, controlling in this way the cellular level of cAMP, a negative regulator of blastic %%%transformation%%%
REGISTRY NUMBERS: 11028-71-0 CONCANAVALIN A; 60-92-4 CYCLIC AMP; 9040-59-9Q CYCLIC NUCLEOTIDE PHOSPHODIESTERASE; 50812-31-2Q CYCLIC NUCLEOTIDE PHOSPHODIESTERASE; 506-32-1 ARACHIDONIC ACID

DESCRIPTORS:
MAJOR CONCEPTS: Cell Biology; Endocrine System (Chemical Coordination and Homeostasis); Enzymology (Biochemistry and Molecular Biophysics); Metabolism
BIOSYSTEMATIC NAMES: Muridae--Rodentia; Mammalia; Vertebrata; Chordata; Animalia
ORGANISMS: Muridae (Muridae)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): animals; chordates; mammals; nonhuman vertebrates; nonhuman mammals; rodents; vertebrates
CHEMICALS & BIOCHEMICALS: CONCANAVALIN A; CYCLIC AMP; CYCLIC NUCLEOTIDE PHOSPHODIESTERASE; ARACHIDONIC ACID
MISCELLANEOUS TERMS: ARACHIDONIC ACID; BLASTIC %%%TRANSFORMATION%%%; CYCLIC AMP; CYCLIC NUCLEOTIDE PHOSPHODIESTERASE; DIACYLGLYCEROL
KINETICS; MITOGENIC ACTIVATION; SECOND MESSENGER
CONCEPT CODES:
02506 Cytology and Cytochemistry-Animal
10808 Enzymes-Physiological Studies
13006 Metabolism-Lipids
17016 Endocrine System-Thymus
10062 Biochemical Studies-Nucleic Acids, Purines and Pyrimidines
10064 Biochemical Studies-Proteins, Peptides and Amino Acids
10066 Biochemical Studies-Lipids
BIOSYSTEMATIC CODES:
86375 Muridae

16/9/6 (Item 6 from file: 55)
DIALOG(R)File 55:Biosis Previews(R)
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09232737 BIOSIS NO.: 199497241107
Dexamethasone-dependent modulation of cholesterol levels in human lymphoblastoid B cell line through sphingosine production.

AUTHOR: Miccheli Alfredo; Tomassini Alberta; Ficciolini Rita; Di Cocco Maria E; Piccolella Enza; Manetti Cesare; Conti Filippo(a)
AUTHOR ADDRESS: (a)Dep. Chemistry, Univ. "La Sapienza", P le Aldo Moro 5 00185 Rome, Italy

JOURNAL: Biochimica et Biophysica Acta 1221 (2) p171-177 1994
ISSN: 0006-3002
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The effect of dexamethasone on lipid composition of Epstein-Barr virus %%%transformed%%% human B lymphocytes have been investigated by 31P- and 1H-NMR spectroscopy and compared to the effects due to exogenous sphingosine treatment. Furthermore, the effects of dexamethasone and sphingosine on membrane structure was evaluated by fluorimetry. No significant changes were evidenced in phospholipid composition and in the ratio of %%%unsaturated%%% to total %%%fatty%%%-%%%acid%%% chains. A significant %%%increase%%% in total cholesterol levels was evident at 30 min incubation with dexamethasone or sphingosine, a parallel %%%increase%%% in DPH polarization at 30 min was also demonstrated. TMA-DPH intensity measurements suggest a slowing of vesicular intracellular traffic due to the treatment. The results suggest a dexamethasone- and sphingosine-dependent inhibition of intracellular cholesterol transport
REGISTRY NUMBERS: 50-02-2 DEXAMETHASONE; 57-88-5 CHOLESTEROL; 123-78-4 SPHINGOSINE; 1720-32-7 DIPHENYLHEXATRIENE; 7723-14-0 PHOSPHORUS-31

DESCRIPTORS:
MAJOR CONCEPTS: Blood and Lymphatics (Transport and Circulation)

Hematology (Human Medicine, Medical Sciences); Metabolism; Oncology (Human Medicine, Medical Sciences); Pharmacology
BIOSYSTEMATIC NAMES: Herpesviridae--Viruses; Hominidae--Primates, Mammalia, Vertebrata, Chordata, Animalia; Papovaviridae--Viruses
ORGANISMS: Epstein-Barr virus (Herpesviridae); Hominidae (Hominidae); Papovaviridae (Papovaviridae)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): animals; chordates; humans, mammals; microorganisms; primates; vertebrates; viruses
CHEMICALS & BIOCHEMICALS: DEXAMETHASONE; CHOLESTEROL; SPHINGOSINE, DIPHENYLHEXATRIENE; PHOSPHORUS-31
MISCELLANEOUS TERMS: ANALYTICAL METHOD; DEXAMETHASONE; DIPHENYLHEXATRIENE POLARIZATION; HORMONE-DRUG; PHOSPHORUS-31 NMR, PROTON NMR
CONCEPT CODES:
13004 Metabolism-Carbohydrates
13006 Metabolism-Lipids
13008 Metabolism-Sterols and Steroids
15004 Blood, Blood-Forming Organs and Body Fluids-Blood Cell Studies
15006 Blood, Blood-Forming Organs and Body Fluids-Blood, Lymphatic and Reticuloendothelial Pathologies
15008 Blood, Blood-Forming Organs and Body Fluids-Lymphatic Tissue and Reticuloendothelial System
22003 Pharmacology-Drug Metabolism; Metabolic Stimulators
22016 Pharmacology-Endocrine System
24005 Neoplasms and Neoplastic Agents-Neoplastic Cell Lines
24006 Neoplasms and Neoplastic Agents-Biochemistry
24010 Neoplasms and Neoplastic Agents-Blood and Reticuloendothelial Neoplasms
02508 Cytology and Cytochemistry-Human
06504 Radiation-Radiation and Isotope Techniques
10056 Biochemical Methods-Lipids
10057 Biochemical Methods-Sterols and Steroids
10058 Biochemical Methods-Carbohydrates
10066 Biochemical Studies-Lipids
10067 Biochemical Studies-Sterols and Steroids
10068 Biochemical Studies-Carbohydrates
10069 Biochemical Studies-Minerals
10504 Biophysics-General Biophysical Techniques
12100 Movement (1971-)
17004 Endocrine System-Adrenals
22005 Pharmacology-Clinical Pharmacology (1972-)
24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
32500 Tissue Culture, Apparatus, Methods and Media
33506 Virology-Animal Host Viruses
36006 Medical and Clinical Microbiology-Virology
BIOSYSTEMATIC CODES:
02616 Papovaviridae (1993-)
86215 Hominidae

16/9/7 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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05214557 BIOSIS NO.: 000082055179
THE COMPOSITION OF FATTY-ACIDS IN THE MITOCHONDRIAL FRACTION OF THE LIVER
AND BRAIN IN MICE WITH TRANSPLANTED LYMPHATIC LEUKEMIA P-388

AUTHOR: MADEJ J A; ZYMCZAK J
AUTHOR ADDRESS: UL. LISKEGO 4/5, 50-345 WROCLAW.

JOURNAL: MED WETER 41 (11): 1985 (RECD. 1986): 691-694.
FULL JOURNAL NAME: Medycyna Weterynaryjna
CODEN: MDWTA
RECORD TYPE: Abstract
LANGUAGE: POLISH

ABSTRACT: The composition of fatty acids by means of gas chromoatography of methyl esters was determined in the mitochondrial fraction of the liver and encephalon of mice hybrids BDF1, which had been given the cells of lymphatic leukemia P 388. The mice were sacrificed after 5 and 11 days since inoculation. An %%%increase%%% of acids C16 = and C20 was observed in the liver along with the development of leukemia and a drop of the level of C18 = 3 and C20 = 3. In the brain during the growth of tumor an %%%increase%%% of acids C17, C18 = 2, and C18 = 3, and a decrease of C20 = and C20 = 4 were noted. In the mitochondrial fraction of the liver of sick mice there was observed %%%increased%%% amounts of %%%unsaturated%%% %%%fatty%%% %%%acids%%% compared with saturated ones. and in the encephalon these relations were adverse. The authors suggest taking part of fatty acids in the destabilisation of mitochondrial membranes of lymphocytes and their %%%transformation%%% into leukemic cells.

DESCRIPTORS: TUMOR GROWTH
CONCEPT CODES:
02506 Cytology and Cytochemistry-Animal
10066 Biochemical Studies-Lipids
11108 Anatomy and Histology, General and Comparative-Microscopic and Ultramicroscopic Anatomy
14004 Digestive System-Physiology and Biochemistry
15006 Blood, Blood-Forming Organs and Body Fluids-Blood, Lymphatic and Reticuloendothelial Pathologies
15008 Blood, Blood-Forming Organs and Body Fluids-Lymphatic Tissue and Reticuloendothelial System
20504 Nervous System-Physiology and Biochemistry
24005 Neoplasms and Neoplastic Agents-Neoplastic Cell Lines
24006 Neoplasms and Neoplastic Agents-Biochemistry
24010 Neoplasms and Neoplastic Agents-Blood and Reticuloendothelial Neoplasms
01058 Microscopy Techniques-Electron Microscopy
10056 Biochemical Methods-Lipids
14001 Digestive System-General; Methods
20501 Nervous System-General; Methods
BIOSYSTEMATIC CODES:
86375 Muridae
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA):
Animals
Chordates
Vertebrates
Nonhuman Vertebrates
Mammals
Nonhuman Mammals
Rodents

16/9/8 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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03903666 BIOSIS NO.: 000075081739
INCORPORATION OF EXOGENOUS FATTY-ACIDS INTO PHOSPHO LIPIDS BY CULTURED
HAMSTER FIBROBLASTS EFFECT OF SV-40
%%%TRANSFORMATION%%%

AUTHOR: MAZIERE C; MAZIERE J-C; MORA L; POLONOVSKI J
AUTHOR ADDRESS: LAB. DE CHIMIE BIOL., ERA 481 DU CNRS, CHU SAINT-ANTOINE,
27 RUE DE CHALIGNY, 75012 PARIS, FR.

JOURNAL: BIOCHIM BIOPHYS ACTA 712 (3): 1982. 712-715
FULL JOURNAL NAME: Biochimica et Biophysica Acta
CODEN: BBACA
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: In situ incorporation of 2 saturated (palmitic, 16:0; stearic 18:0) and 3 unsaturated fatty acids (oleic, (18:1, linoleic, 18:2, arachidonic, 20:4) into the 4 major phospholipids, sphingomyelin, PC [phosphatidylcholine], PI [phosphatidylinositol] and PE [phosphatidylethanolamine], was followed. SV40 %%%transformed%%% hamster fibroblast cells incorporated unsaturated fatty acids more rapidly, whereas no significant differences were found concerning saturated fatty acids. In vitro determination of phospholipid acylation showed that incorporation of CoA-activated forms of 2 saturated fatty acids (16:0 and 18:0) and 1 %%%unsaturated%%% %%%fatty%%% %%%acid%%% (18:1) into phospholipids was %%%increased%%% in %%%transformed%%% cells. Comparison of results obtained in situ and in vitro strongly suggests that incorporation of fatty acids into phospholipids in cultured cells is not limited by acyltransferase activities.

DESCRIPTORS: COENZYME A ACYL TRANSFERASE SPHINGOMYELIN PHOSPHATIDYL CHOLINE
PHOSPHATIDYL INOSITOL PHOSPHATIDYL ETHANOLAMINE PALMITIC-ACID STEARIC-ACID
OLEIC-ACID LINOLEIC-ACID ARACHIDONIC-ACID
CONCEPT CODES:
02506 Cytology and Cytochemistry-Animal
10508 Biophysics-Membrane Phenomena
10808 Enzymes-Physiological Studies
13006 Metabolism-Lipids
24004 Neoplasms and Neoplastic Agents-Pathology, Clinical Aspects Systemic Effects
24006 Neoplasms and Neoplastic Agents-Biochemistry
24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
10064 Biochemical Studies-Proteins, Peptides and Amino Acids
10066 Biochemical Studies-Lipids
10802 Enzymes-General and Comparative Studies, Coenzymes
10806 Enzymes-Chemical and Physical
18001 Bones, Joints, Fasciae, Connective and Adipose Tissue-General Methods
32600 In Vitro Studies, Cellular and Subcellular
BIOSYSTEMATIC CODES:
02226 Papovaviridae (1979-)
86310 Cricetidae

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA)
Microorganisms
Viruses
Animals
Chordates
Vertebrates
Nonhuman Vertebrates
Mammals
Nonhuman Mammals
Rodents

16/9/9 (Item 3 from file: 5)
DIALOG(R)File 5 Biosis Previews(R)
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03654303 BIOSIS NO. 000074069880
DIFFERENTIAL EFFECT OF IMIDAZOLE ANTIBIOTICS ON UNTRANSFORMED AND VIRUS
%%%TRANSFORMED%%% RAT CELL LINES

AUTHOR: KUWANO M; AKIYAMA S-I; KANEKO M; IKEZAKI K; TAKAKI R; KIMURA G
AUTHOR ADDRESS: DEPARTMENT OF BIOCHEMSITRY AND INTERNAL MEDICINE, OITA
MEDICAL SCHOOL, HAZAMA-CHO, OITA 879-56, JPN

JOURNAL: CANCER RES 42 (1): 1981 (RECD 1982): 280-284
FULL JOURNAL NAME: Cancer Research
CODEN: CNREA
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: The imidazole antimycotics clotrimazole and miconazole were tested on untransformed rat (embryo) cell line 31-B clone 1-6 (3Y1) and 6 %%%transformed%%% cell lines, which were independently isolated from 3Y1 or 3Y1-B clone 1 after infection with adenovirus 12 (AD-12) or with SV40. To determine their sensitivities to these drugs. The relative plating efficiency of 3 cell lines (T3, W4 and W5) %%%transformed%%% with AD-12 was reduced to 10-1 of the initial value by clotrimazole (2-4 mu g/ml), whereas that of the parental cell line 3Y1 was reduced to 10-1 of the initial value by clotrimazole (20-25 mu g/ml). By contrast, the differential effect of miconazole on 3Y1 and AD-12 %%%transformed%%% cell lines was a factor of 2. The sensitivity of the SV40-%%%transformed%%% cell lines to these drugs was between the untransformed 3Y1 and the AD-12-%%%transformed%%% cell lines. The cellular sensitivity of untransformed 3Y1 cells to clotrimazole was significantly %%%enhanced%%% when exposed to various doses of the %%%unsaturated%%% %%%fatty%%% %%%acid%%% linoleic acid. The untransformed and %%%transformed%%% cell lines showed sensitivities similar to the cytocidal activity of sterol-binding antimycotics, amphotericin B and filipin. [%%%Transformed%%% cell lines No. 9, C-65 and C-66 were also used.]

DESCRIPTORS: EMBRYO 3Y-1-B CELLS T-3 CELLS NO 9 CELLS W-4 CELLS W-5 CELLS
C-65 CELLS C-66 CELLS ADENOVIRUS 12 SV-40 CLOTRIMAZOLE
AMPHOTERICIN B
FILIPIN ANTINEOPLASTIC-DRUG
CONCEPT CODES
22003 Pharmacology-Drug Metabolism, Metabolic Stimulators
24008 Neoplasms and Neoplastic Agents-Therapeutic Agents, Therapy
38502 Chemotherapy-General: Methods, Metabolism
02506 Cytology and Cytochemistry-Animal
10010 Comparative Biochemistry, General
10060 Biochemical Studies-General
12512 Pathology: General and Miscellaneous-Therapy (1971-)
24005 Neoplasms and Neoplastic Agents-Neoplastic Cell Lines
24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
25504 Developmental Biology-Embryology-Experimental
33506 Virology-Animal Host Viruses
36006 Medical and Clinical Microbiology-Virology
BIOSYSTEMATIC CODES
02210 Adenoviridae (1979-)
02226 Papovaviridae (1979-)
86375 Muridae
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA)
Microorganisms
Viruses
Animals
Chordates
Vertebrates
Nonhuman Vertebrates
Mammals
Nonhuman Mammals
Rodents

16/9/10 (Item 4 from file: 5)
DIALOG(R)File 5 Biosis Previews(R)
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03294796 BIOSIS NO. 000072022899
FATTY-ACID CONTENT AND COMPOSITION OF PHOSPHO LIPIDS FROM THE ENDOPLASMIC
RETICULUM IN DEVELOPING RAT LIVER

AUTHOR: DHAMI M S I; DE LA IGLESIA F A; FEUER G
AUTHOR ADDRESS: DEP CLIN BIOCHEM, UNIV TORONTO, TORONTO M5G 1L5, ONTARIO, CANADA

JOURNAL: RES COMMUN CHEM PATHOL PHARMACOL 32 (1): 1981: 99-112
FULL JOURNAL NAME: Research Communications in Chemical Pathology and Pharmacology
CODEN: RCOCB
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Development of enzyme functions of the endoplasmic reticulum in the neonatal rat liver is associated with formation of membrane-bound phospholipids. Distribution of fatty acid moieties was examined in isolated endoplasmic reticulum membranes of liver after birth and postnatal development. The content of microsomal phosphatidylcholine phophatidylethanolamine, sphingomyelin and lysophosphatidylcholine was raised throughout the postnatal to the adult animal. Acyl components were also %%%increased%%%, especially %%%unsaturated%%% %%%fatty%%% %%%acids%%% such as arachidonic, docosapentaenoic and docosahexaenoic acids. Saturated components such as palmitic and stearic acids were reduced during maturation. Ontogenesis of the hepatic endoplasmic reticulum correlated with selectively %%%increased%%% production of discrete phospholipid moieties containing greater amounts of %%%unsaturated%%% %%%fatty%%% %%%acids%%%. During development phospholipids are required for structural membrane assembly. They also display a determining role in the organization of enzyme activity for xenobiotic biotransformation

DESCRIPTORS: XENOBIOTIC BIO %%%TRANSFORMATION%%% ENZYME ACTIVITY
PHOSPHATIDYL CHOLINE PHOSPHATIDYL ETHANOLAMINE SPHINGOMYELIN LYSO PHOSPHATIDYL CHOLINE DOCOSA PENTAENOIC-ACID ARACHIDONIC-ACID DOCOSA HEXAENOIC-ACID PALMITIC-ACID STEARIC-ACID MEMBRANE ASSEMBLY
CONCEPT CODES
02506 Cytology and Cytochemistry-Animal
10508 Biophysics-Membrane Phenomena
10808 Enzymes-Physiological Studies
13002 Metabolism-General Metabolism; Metabolic Pathways
13006 Metabolism-Lipids
14004 Digestive System-Physiology and Biochemistry
25508 Developmental Biology-Embryology-Morphogenesis, General
10060 Biochemical Studies-General
10064 Biochemical Studies-Proteins, Peptides and Amino Acids
10066 Biochemical Studies-Lipids
25000 Pediatrics
BIOSYSTEMATIC CODES
86375 Muridae
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA)
Animals
Chordates
Vertebrates
Nonhuman Vertebrates
Mammals
Nonhuman Mammals
Rodents

16/9/11 (Item 5 from file: 5)
DIALOG(R)File 5 Biosis Previews(R)
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02711630 BIOSIS NO. 000068022219
EFFECTS OF ARACHIDONIC-ACID AND OTHER UNSATURATED FATTY-ACIDS ON
MITOGENESIS IN HUMAN LYMPHOCYTES

AUTHOR: KELLY J P; PARKER C W
AUTHOR ADDRESS: DIV ALLERGY IMMUNOL, DEP INTERN MED, WASH UNIV SCH MED, PULLMAN, WASH, USA

JOURNAL: J IMMUNOL 122 (4): 1979: 1556-1562
FULL JOURNAL NAME: Journal of Immunology
CODEN: JOIMA
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: The effect of fatty acids and other lipids on mitogenic responses in cultured human peripheral blood lymphocytes was studied. Several-fold %%%enhancement%%% of 3H-thymidine incorporation was observed at 0.1-5.0 mu g/ml concentrations of arachidonic acid. Other %%%unsaturated%%% %%%fatty%%% %%%acids%%% produced less marked changes

%%%Increased%%%
responsiveness was demonstrable in a variety of media including RPMI 1640 supplemented with 10% fetal calf serum. Changes were observed in uridine incorporation, total cell number, and blast %%%transformation%%%, indicating that the effect was not on thymidine transport or pool size per se. Arachidonic acid failed to affect PHA [phytohemagglutinin] binding, indicating that the lectin-cell interaction was not being altered. Higher concentrations of fatty acids were inhibitory.

DESCRIPTORS: PHYTO HEM AGGLUTININ LIPIDS
CONCEPT CODES:
10066 Biochemical Studies-Lipids
15004 Blood, Blood-Forming Organs and Body Fluids-Blood Cell Studies
15008 Blood, Blood-Forming Organs and Body Fluids-Lymphatic Tissue and Reticuloendothelial System
34508 Immunology and Immunochemistry-Immunopathology, Tissue immunology
06504 Radiation-Radiation and Isotope Techniques
10062 Biochemical Studies-Nucleic Acids, Purines and Pyrimidines
10064 Biochemical Studies-Proteins, Peptides and Amino Acids
13014 Metabolism-Nucleic Acids, Purines and Pyrimidines
22008 Pharmacology-Blood and Hematopoietic Agents
22018 Pharmacology-Immunological Processes and Allergy
32500 Tissue Culture, Apparatus, Methods and Media
51522 Plant Physiology, Biochemistry and Biophysics-Chemical Constituents
54000 Pharmacognosy and Pharmaceutical Botany
BIOSYSTEMATIC CODES:
11000 Plantae-Unspecified
86215 Hominidae
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA):
Plants
Animals
Chordates
Vertebrates
Mammals
Primates
Humans

16/9/12 (Item 6 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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02485448 BIOSIS NO. 000066068001
EFFECT OF A SINGLE ETHANOL INJECTION ON LIPID AND LIPO PROTEIN SYNTHESIS IN RAT LIVER

AUTHOR: TITOV V N; PITSIN D G
AUTHOR ADDRESS: ALL-UNION CARDIOL. SCI. CENT. ACAD. MED. SCI. USSR, MOSCOW, USSR

JOURNAL: BIOKHIMIYA 43 (1): 1978 83-88
FULL JOURNAL NAME: Biokhimiya
CODEN: BIOHA
RECORD TYPE: Abstract
LANGUAGE: RUSSIAN

ABSTRACT: A single ethanol injection resulted in an %%%increase%%% of mono-, di- and triglyceride synthesis in rat liver, as well as the synthesis of apoprotein of very low density lipoproteins, the formation and secretion. Different uptake of pools of 14C-acetyl CoA, synthesized from injected 14C-acetate, and 3H-acetyl CoA, synthesized through metabolic pathways of 3H-leucine, indicates the compartmentalization of acetyl CoA in the synthesis of saturated and unsaturated fatty acids. 3H-acetyl CoA is more intensively used in the synthesis of %%%unsaturated%%% %%%fatty%%% %%%acids%%% than 14C-acetyl CoA synthesized from acetate. Ethanol %%%increases%%% the uptake of acetyl CoA synthesized from acetate, for the synthesis of all the lipids, probably at the expense of the %%%increased%%% synthesis of endogenous acetate in the metabolic %%%transformation%%% of ethanol.

DESCRIPTORS: ACETYL COENZYME A
CONCEPT CODES:
13006 Metabolism-Lipids
13012 Metabolism-Proteins, Peptides and Amino Acids
14004 Digestive System-Physiology and Biochemistry
22501 Toxicology-General, Methods and Experimental
06504 Radiation-Radiation and Isotope Techniques
10060 Biochemical Studies-General
10064 Biochemical Studies-Proteins, Peptides and Amino Acids
10066 Biochemical Studies-Lipids
10802 Enzymes-General and Comparative Studies, Coenzymes
BIOSYSTEMATIC CODES:
86375 Muridae
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA):
Animals
Chordates
Vertebrates
Nonhuman Vertebrates
Mammals
Nonhuman Mammals
Rodents

16/9/13 (Item 7 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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02181280 BIOSIS NO. 000064023794
THE EFFECTS OF BIOTIN AND FATTY-ACIDS ON SV-3T3 CELL GROWTH ON THE PRESENCE OF NORMAL CALF SERUM

AUTHOR: MESSMER T O; YOUNG D V

JOURNAL: J CELL PHYSIOL 90 (2): 1977 265-270
FULL JOURNAL NAME: Journal of Cellular Physiology
CODEN: JCLLA
RECORD TYPE: Abstract

ABSTRACT: The growth of [mouse SV-40 %%%transformed%%% fibroblast] SV3T3 cells in medium containing a low concentration (0.20% vol/vol) of normal calf serum is %%%enhanced%%% by the addition of biotin or certain %%%unsaturated%%% %%%fatty%%% %%%acids%%%. The biotin effect on the final viable cell density is 5- to 10-fold over the control and is extremely potent, exerting a saturating response at a concentration of approximately 200 pg/ml. The optimal growth response observed with fatty acids is 5-fold over the control and requires the combination of nervonic acid, palmitoleic acid and arachidonic acid. The fatty acids are probably not replacing the function of biotin since these 2 substances are additive in their growth effects.

DESCRIPTORS: MOUSE SV-40 PAPOVAVIRUS %%%TRANSFORMED%%% FIBROBLASTS
NERVONIC-ACID PALMITOLEIC-ACID ARACHIDONIC-ACID
CONCEPT CODES:
02506 Cytology and Cytochemistry-Animal
13210 Nutrition-Water-Soluble Vitamins
13222 Nutrition-Lipids (1972-)
24005 Neoplasms and Neoplastic Agents-Neoplastic Cell Lines
24006 Neoplasms and Neoplastic Agents-Biochemistry
32500 Tissue Culture, Apparatus, Methods and Media
10010 Comparative Biochemistry, General
10063 Biochemical Studies-Vitamins
10066 Biochemical Studies-Lipids
13006 Metabolism-Lipids
13018 Metabolism-Water-Soluble Vitamins
32600 In Vitro Studies, Cellular and Subcellular
BIOSYSTEMATIC CODES:
03200 Animal Viruses (1969-78)
85715 Bovidae
86375 Muridae
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA):
Microorganisms
Viruses
Animals
Chordates
Vertebrates
Nonhuman Vertebrates
Mammals
Nonhuman Mammals
Artiodactyls
Rodents

16/9/14 (Item 1 from file: 144)
DIALOG(R)File 144:Pascal
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13718095 PASCAL No. 98-0409378
Skin penetration %%%enhancing%%% action of cis-%%%unsaturated%%% %%%fatty%%% %%%acids%%% with omega -9- and omega -12-chain lengths
TAKEUCHI Y; YAMAOKA Y; FUKUSHIMA S; MIYAWAKI K; TAGUCHI K; YASUKAWA H
KISHIMOTO S; SUZUKI M
Department of Pharmaceutics, Faculty of Pharmaceutical Sciences, Kobe Gakuin University, Arise Igawadani-cho, Nishi-ku, Kobe 651-21, Japan
Oleochemical Research Laboratory, NOF corporation, 1-56 Oohama-cho, Amagasaki, 660, Japan
Journal: Biological & pharmaceutical bulletin, 1998, 21 (5) 484-491
ISSN: 0918-6158, Availability: INIST-18096, 354000072288780120
No. of Refs.: 16 ref.
Document Type: P (Serial); A (Analytic)
Country of Publication: Japan
Language: English
The skin penetrative action of high purity cis- omega -12-octadecenoic acid (petroselinic acid, HP-PSA) on rat skin was compared with that of high purity cis- omega -9-octadecenoic acid (oleic acid, HP-OA) following

treatment of rat intact skin surface with either 0 05 M HP-PSA or HP-OA in propylene glycol (PG), using Fourier %%%transform%%% /attenuated total reflection (FT-IR/ATR) analysis Both HP-PSA and HP-OA disordered the lipid structures of the stratum corneum region to a similar extent Removal of the extractable lipids of the stratum corneum region was marked with HP-PSA/PG but was very slight upon HP-OA/PG treatment The spectra of the amide II region which originated from proteins suggests that HP-PSA/PG more rapidly disordered the protein structures of both the stratum corneum and the dermis than HP-OA/PG However, the extent of disordering of the protein structures was presumed to be similar between these two skin penetration %%%enhancers%%% at the maximum level %%%Enhancement%%% of PG f ux in the
dermis showed strong positive correlation with the degree of dermisdisordering action of HP-PSA/PG and HP-OA/PG These results demonstrate that HP-PSA, which has a double bond at an even numbered position (omega -12), more rapidly affects the perturbation of the structures of both the stratum corneum and the dermis than HP-OA, which has the double bond at an odd numbered position (omega -9) Differences in the physicochemical properties of HP-PSA and HP-OA which originate from differences in the double bond position most likely determine the efficacy of these compounds as skin penetration %%%enhancers%%%

English Descriptors Absorption %%%enhancer%%%, Skin, %%%Unsaturated%%%
%%%fatty%%% %%%acid%%% Cis stereoisomer, Oleic acid, Stratum corneum,
Lipids, Protein, Derm, Position isomer
French Descriptors Promoteur absorption, Peau, Acide gras insature, Stereoisomere cis, Oleique acide, Couche cornee Lipide, Proteine, Derme Isomere position, Petroselinique acide

Classification Codes 002B02A03

16/9/15 (Item 2 from file 144)
DIALOG(R)File 144 Pascal
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13174679 PASCAL No 97-0437093
Ruminal fermentation and nutrient digestion in sheep fed Hydroxyethylsoyamide
JENKINS T C
Department of Animal, Dairy, and Veterinary Sciences, Clemson University, Clemson, SC 29630, United States
Journa Journal of animal science 1997 75 (8) 2277-2283
ISSN 0021-8812 Availability INIST-3247, 354000067819920330
No of Refs 18 ref
Document Type P (Serial) , A (Analytic)
Country of Publication United States
Language English
Hydroxyethylsoyamide (HESA) was reported previously to protect soybean oil from ruminal biohydrogenation and %%%increase%%% plasma %%%unsaturated%%% %%%fatty%%% %%%acids%%% in sheep Two digestibility
trials with sheep and a rumen in vitro trial were conducted in this study to determine the effects of HESA on ruminal VFA and nutrient digestibility Trial 1 was a 4 x 4 Latin square with 17-d periods in which four wethers were fed either a control diet (CON) with no added fat, 2 5% soybean oil (SBO), 5% butylsoyamide (BuSA), or 5% HESA The HESA diet was ground with a
mortar and pestle before feeding to disperse fat lumps that formed during diet mixing Compared with the CON diet, the HESA diet reduced DMI, acetate/ propionate (A/P) and total tract fiber digestibility, but these were not affected by SBO or BuSA Trial 2 was a 24-h rumen in vitro study showing that total VFA concentration and A/P in cultures were reduced by 10% linoleic acid but not by 10% ethanolamine or 10% HESA In Trial 3, four wethers were fed the CON and HESA diets in a replicated 2 x 2 Latin square to determine digestibility responses to HESA when grinding was avoided Fiber digestibilities and A/P were not affected by HESA in Trial 3 The HESA in this study had variable effects on fiber digestibility that may have been related to physical attributes of the diet, including particle size Substitution of ethanolamine for butylamine during synthesis of the amide %%%increased%%% fatty acid digestibility but reduced dry matter intake

English Descriptors Animal feeding, Rumen, Fermentation, Digestion, Digestibility, Soybean oil, Processed food, Nutrient, Fatty amide, Fatty acids, Dietary fiber, Sheep
Broad Descriptors Ruminant animal, Stomach, Digestive system, Lipids, Artiodactyla, Ungulata, Mammalia, Vertebrata, Animal ruminant, Estomac, Appareil digestif, Lipide, Artiodactyla, Ungulata, Mammalia, Vertebrata, Animal rumiante, Estomago, Aparato digestivo, Lipido, Artiodactyla, Ungulata, Mammalia, Vertebrata
French Descriptors Alimentation animale, Rumen, Fermentation, Digestion, Digestibilite, Huile soja, Aliment %%%transforme%%%, Nutriment, Amide gras, Acide gras, Fibre alimentaire, Mouton

Classification Codes 002A36C03

16/9/16 (Item 3 from file 144)
DIALOG(R)File 144 Pascal
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12387524 PASCAL No 96-0034589
Apparent pK SUB a of the fatty acids within ordered mixtures of model human stratum corneum lipids
LIECKFELDT R, VILLALAIN J, GOMEZ-FERNANDEZ J C, LEE G
Erlangen univ , dep pharmaceutical technology, Federal Republic of Germany
Journal Pharmaceutical research, 1995, 12 (11) 1614-1617
ISSN 0724-8741 CODEN PHREEB Availability INIST-20257, 354000059147680070
No of Refs 14 ref
Document Type P (Serial), C (Book review) , A (Analytic)
Country of Publication USA
Language English
Purpose The apparent pK SUB a of the fatty acids within hydrated (30 % w/w) model human stratum corneum (SC) lipid mixtures should be measured Methods The degree of ionisation of the fatty acids was calculated as a function of pH using Fourier %%%transform%%% infra-red spectroscopy The relative intensity of the stretching bands of the unionized and ionized carboxylic groups was determined and fitted to the relevant expression for ionic equilibrium of a monoprotic acid The pK SUB a was then calculated for %%%increasing%%% proportion of %%%unsaturated%%% %%%fatty%%% %%%acid%%%
in the lipid mixture Results Values for pK SUB a in the range 6 2-7 3 were found, %%%increasing%%% with greater proportion of oleic acid These are some 1 5-3 pH units higher than the pK SUB a s of fatty acids in molecular solution Conclusions As there exists a pH-gradient across the SC the degree of ionisation will also vary In the innermost SC layers a pH of 7 will produce 90% ionization of the fatty acids and head-group repulsion will be great At the SC surface, the pH of 5 will cause almost minimal head-group repulsion, tending to %%%increase%%% crystallinity and promote a bilayer structure

English Descriptors Fatty acids, pK, Human, Stratum corneum, Lipids, Ionization, In vitro, Mixture

French Descriptors Acide gras, pK, Homme, Couche cornee, Lipide, Ionisation, In vitro, Melange

Classification Codes 002A19

16/9/17 (Item 4 from file 144)
DIALOG(R)File 144 Pascal
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12025065 PASCAL No 95-0217419
Influence of oleic acid on the structure of a mixture of hydrated model stratum corneum fatty ac ds and their soaps
LIECKFELDT R, VILLALAIN J, GOMEZ-FERNANDEZ J C, LEE G
Univ Erlangen dep pharmaceutical ecology, 91058 Erlangen, Federal Republic of Germany
Journal Colloids and surfaces A, Physicochemical and engineering aspects, 1994, 90 (2-3) 225-234
ISSN 0927-7757 Availability INIST-18274 A, 354000041670950110
No of Refs 22 ref
Document Type P (Serial) A (Analytic)
Country of Publication Netherlands
Language English
The phase behaviour of a hydrated (32% (w/w) water) mixture of saturated and %%%unsaturated%%% %%%fatty%%% %%%acids%%% and their soaps has been
examined By progressively %%%increasing%%% the proportion of oleic acid it could be shown that this unsaturated component exists partly as a separate phase within the others The unsaturated fatty ac ds form an H SUB I SUB I , phase at 25 SUP o C, whereas the saturated fatty acids form a fatty acid-soap crystal under the conditions employed The results help to explain the role played by the fatty acids (and also cholesterol) within the lipid fraction of human stratum corneum A feature of this study is a comparison of the results obtained by X-ray diffraction differential scanning calorimetry and Fourier %%%transform%%% infrared spectroscopy

English Descriptors Experimental study, X ray diffraction, Infrared spectrometry, Differential scanning calorimetry, Fatty acids, Soap, Stratum corneum, Lipids, Polymorphism, Carboxylic acid, Oleic acid, Stearic acid, Palmitic acid, Myristic acid

French Descriptors Etude experimentale, Diffraction RX, Spectrometrie IR, Calorimetrie differentielle balayage, Acide gras, Savon, Couche cornee, Lipide, Polymorphisme, Acide carboxylique, Oleique acide, Stearique acide, Palmitique acide, Myristique acide

Classification Codes 001C01I07
? ds

Set Items Description
S1 1871321 BACTER?
S2 0 MEMBRANE#
S3 1452758 MEMBRANE?
S4 0 S1 (10N) S2
S5 26356 S1 (10N) S3
S6 3058102 INCREAS? OR ENHANC?
S7 607785 FLUID?
S8 26248 S6 (10N) S7
S9 15 S5 (10N) S8
S10 10 RD S9 (unique items)
S11 18323 UNSATURATED (5N) FATTY (W) ACID?
S12 1620 S6 (10N) S11
S13 17 S12 AND S5
S14 14 RD S13 (unique items)
S15 27 S12 AND S6 AND TRANSFORM?
S16 17 RD S15 (unique items)
? s s8 and s1 and transform?

26248 S8
1871321 S1
600341 TRANSFORM?
S17 18 S8 AND S1 AND TRANSFORM?
? rd s17

completed examining records
S18 12 RD S17 (unique items)
? t s18/k/1-12

18/K/1 (Item 1 from file: 55)
DIALOG(R)File 55 (c) 1999 BIOSIS All rts reserv

%%%Transformation%%% of sterols by Mycobacterium vaccae Effect of lecithin
on the permeability of cell envelopes to...

ABSTRACT An enhancement of beta-sitosterol %%%transformation%%% to androstendione by Mycobacterium vaccae observed in medium containing egg-yolk lecithin, was associated with ...

of methyl-branched components in the control cell preparation The enrichment in unsaturated fatty acids %%%increases%%% %%%fluidity%%% of
lipids whereas the decrease in methyl-branched fatty acids may affect the conformation of
DESCRIPTORS
BIOSYSTEMATIC NAMES %%%Bacteria%%%-General Unspecified

Eubacteria %%%Bacteria%%%

Eubacteria %%%Bacteria%%%
ORGANISMS %%%bacteria%%% (%%%Bacteria%%% - General Unspecified
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA) %%%bacteria%%%
MISCELLANEOUS TERMS %%%TRANSFORMATION%%%

18/K/2 (Item 2 from file: 55)
DIALOG(R)File 55 (c) 1999 BIOSIS All rts reserv

ABSTRACT Osteopontin (OPN), a secreted acidic phosphoglycoprotein found in
many tissues and body %%%fluids%%%, is produced in %%%increased%%% amounts in response to certain infections and after malignant %%%transformation%%% In this study we examined the action of OPN on macrophage cytotoxicity and nitric oxide (NO_2^-) synthesis A human OPN cDNA was cloned into the %%%bacteriophage%%% T7-based vector, pET8C, and the
encoded protein purified from an induced culture of Escherichia

18/K/3 (Item 3 from file: 55)
DIALOG(R)File 55 (c) 1999 BIOSIS All rts reserv

ABSTRACT of insoluble aggregates The mature enzyme was detected in both the periplasm and the cultural %%%fluid%%% in the form three methazymes with an %%%increased%%% (as compared with the original strain)
content of methazymes I and II The cell envelope of E coli DH1 %%%transformed%%% by plasmid PIII-7 with the phoA gene differed from that of the original strain

result of restricted secretion sites and lack of inhibition of translation of secreted proteins in %%%bacteria%%%
DESCRIPTORS
BIOSYSTEMATIC NAMES Eubacteria %%%Bacteria%%%
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA) %%%bacteria%%%

18/K/4 (Item 4 from file: 55)
DIALOG(R)File 55 (c) 1999 BIOSIS All rts reserv

ABSTRACT during pregnancy and labour, both at term and preterm and to establish the effects of %%%bacterial%%% endotoxin and cytokines on the in vitro release of TNF-alpha from intrauterine tissues Maternal

the time of labour (543.5+-138.6 ng/l, N=43) In contrast, amniotic %%%fluid%%% TNF-alpha concentrations %%%increased%%% significantly (p lt
0.05) during pregnancy (early pregnancy, EP, 93.0 +- 24.8 ng

alpha. Furthermore, the release of TNF-alpha was increased significantly (p lt 0.05) by %%%bacterial%%% endotoxin (lipopolysaccharide, 10 ng/1-10 mg/l) but was not affected by the following

stimulating factor (1.2 nmol/l), leukaemia inhibitory factor (0.4 5 nmol/l) and %%%transforming%%% growth factor-beta (0.4 nmol/l) The data obtained in this study are consistent
MISCELLANEOUS TERMS %%%TRANSFORMING%%% GROWTH FACTOR-BETA

18/K/5 (Item 5 from file: 55)
DIALOG(R)File 55 (c) 1999 BIOSIS All rts reserv

ABSTRACT their ferritin content after infection by HIV-1, not justified by the modest and late %%%increase%%% of ferritin in the %%%fluids%%% due to disruption of infected cells Since ferritin is involved in the control of cell
DESCRIPTORS
BIOSYSTEMATIC NAMES Eubacteria, %%%Bacteria%%%,
...BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA) %%%bacteria%%%
MISCELLANEOUS TERMS BLAST %%%TRANSFORMATION%%% INDUCTION

18/K/6 (Item 1 from file: 5)
DIALOG(R)File 5 (c) 1999 BIOSIS All rts reserv

ABSTRACT To circumvent problems encountered in the synthesis of active chymosin in a number of %%%bacteria%%% and fungi, a recombinant DNA L-form expression system that directed the complete secretion of

SpeA. Secretion of fusion prochymosin enzymatically and immunologically indistinguishable from bovine prochymosin was achieved after %%%transformation%%% of two stable protoplast type L-form strains derived from Proteus mirabilis The secreted proenzyme

as high as 40 +- 10 mu g/ml were obtained in the cell-free culture %%%fluid%%% of strain L99 carrying a naturally altered expression plasmid of %%%increased%%% segregational stability The expression-secretion system described may be generally useful for production of recombinant
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA)
Microorganisms
%%%Bacteria%%%

18/K/7 (Item 2 from file: 5)
DIALOG(R)File 5 (c) 1999 BIOSIS All rts reserv

PROTEIN-LIPID INTERACTIONS IN PHOSPHOLIPID MONOLAYERS CONTAINING THE
%%%BACTERIAL%%% ANTENNA PROTEIN B-800-850

...ABSTRACT protein B800-850 (LHCP) and in some cases additionally the reaction center of the photosynthetic %%%bacterium%%% Rhodopseudomonas
sphaeroides are reported Information on monolayer preparation as well as on protein/lipid and

is shown that a homogeneous distribution of functional proteins can be achieved This can be %%%transformed%%% into a regular pattern-like distribution by inducing a phospholipid phase transition Although the LHCP...

decreases the lateral pressure necessary to crystallize the lipid This is probably due to an %%%increase%%% in order of the %%%fluid%%% phase. A
pressure-induced conformation change of the LHCP is detected via a drastic change
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA)
Microorganisms
%%%Bacteria%%%

18/K/8 (Item 3 from file: 5)
DIALOG(R)File 5 (c) 1999 BIOSIS All rts reserv

ABSTRACT sensitive in contrast to mature lipoprotein The precursor protein with the peptide extension is apparently %%%transformed%%% into a new assembly intermediate after the extended peptide is cleaved off This intermediate may

The results are discussed in terms of control of gene expression for matrix protein PEA %%%increased%%% the membrane %%%fluidity%%%

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA)
Microorganisms
%%%Bacteria%%%

18/K/9 (Item 4 from file: 5)
DIALOG(R)File 5:(c) 1999 BIOSIS All rts. reserv.

ABSTRACT: T [thymus-derived] and B [bone marrow-derived] lymphocyte ratio, leukocyte migration inhibition and lymphocyte %%%transformation%%% responses to dental plaque %%%bacteria%%% (Actinomyces viscosus, %%%Bacteroides%%% melaninogenicus, Fusobacterium nucleatum, and Veillonella parvula) and purified protein derivative or phytohemagglutinin and lymphocyte ATPase

period III), after 14 d with optimal oral hygiene. After period I, gingival inflammation and %%%increased%%% gingival %%%fluid%%% flow developed in all groups; in group C some of the clinical and immunological responses.

DESCRIPTORS: HUMAN ACTINOMYCES-VISCOSUS
%%%BACTEROIDES%%%-MELANINOGENICUS
FUSOBACTERIUM-NUCLEATUM VEILLONELLA-PARVULA
IMMUNOLOGIC-DRUG PURIFIED
PROTEIN DERIVATIVE PHYTO HEM AGGLUTININ LYMPHOCYTE ATPASE
BIOSYSTEMATIC CODES
04910 %%%Bacteroidaceae%%% (1979-)
05210 Veillonellaceae (1979-)
05810 Actinomycetaceae (1979-)
05822 Mycobacteriaceae (1979-)
11600 Plantae-Unspecified
86215 Hominidae
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA)
Microorganisms
%%%Bacteria%%%
Plants
Animals
Chordates
Vertebrates
Mammals
Primates
Humans

18/K/10 (Item 1 from file: 434)
DIALOG(R)File 434 (c) 1998 Inst for Sci Info All rts. reserv.

Research Fronts: 001 (SUPEROXIDE ANION RELEASE, POLYMORPHONUCLEAR
LEUKOCYTES, SELENIUM TREATMENT IN RHEUMATOID-ARTHRITIS
HUMAN-ENDOTHELIAL CELLS, SYNOVIAL-%%%FLUID%%% GRANULOCYTES)
86-1674 001 (TRANSCRIPTIONAL %%%ENHANCER%%%, VIRAL REGULATORY ELEMENTS,
ADENOVIRUS E1A GENE, REGULATION OF POLYOMAVIRUS Llate PROMOTER ACTIVITY,
ACTIVATION OF GENE

FREQUENCY IN LYMPHOCYTES, HAMSTER HEPATOCYTE-MEDIATED INDUCTION)
86-3403 001 (ROUS-SARCOMA VIRUS, TYROSINE PHOSPHORYLATION,
%%%TRANSFORMING%%% PROTEIN, PP60C-SRC KINASE, EPIDERMAL GROWTH-FACTOR
RECEPTOR)
86-4000 001 (PROENKEPHALIN-A RELATED-PEPTIDES

INHIBITS DIFFERENTIATION OF A MOUSE ERYTHROLEUKEMIA CELL-LINE)
86-4179 001 (LIPOPOLYSACCHARIDE OF LEGIONELLA-PNEUMOPHILA
%%%BACTERIAL%%% LIPOPOLYSACCHARIDES IN POLYACRYLAMIDE GELS, POLYVALENT
PSEUDOMONAS-AERUGINOSA VACCINE PEV)
86-4133 001 (RAT-LIVER MICROSOMAL

18/K/11 (Item 1 from file: 144)
DIALOG(R)File 144 (c) 1999 INIST/CNRS All rts. reserv.

Leg 150: The shallow- to deep-water transect provides an opportunity to examine the diagenetic %%%transformations%%% of the sediment with increasing distance from the shoreline. Numerous episodes of diagenesis (with formation

plain sediment. In contrast, less nucleation of crystallites, coarser crystal forms, and diagenesis below the %%%bacterial%%% sulfate reduction zone are characteristic of the upper slope Sites. Diagenesis is patchy at the

Eocene sediment by a decrease in the calcium carbonate and opal content and by an %%%increase%%% in detrital minerals. Diagenetic %%%fluids%%%
%%%transformed%%% the unconformable surface of upper Eocene biosiliceous
chalks into a mosaic of euhedral to subhedral

brown glauconites that indicate terrigenous sediment transport and reworking. More episodes of diagenesis, abundant former %%%fluid%%% migration routes, which suggest %%%increased%%% pore-%%%fluid%%% activity,
and sediment reworking are associated with the two other Eocene unconformable surfaces. Energy dispersive

.English Descriptors: Atlantic; continental slope; Eocene; drilling; Ocean Drilling Program; diagenesis; sea level; carbonates; boreholes; depth; unconformities; %%%transformations%%%; micrite; calcite; dolomite; silica; cement; coastal environment; nucleation; crystallites; changes of level; eustacy; microfossils; thin

.French Descriptors: Nord Ouest; Talus continental; Eocene; Forage; ODP; Diagenese; Niveau marin; Carbonate; Puits forage; Profondeur; Discordance; %%%Transformation%%%; Micrite; Calcite; Dolomite; Silice; Ciment roche; Milieu littoral; Nucleation; Cristallite; Variation niveau; ODP Leg 150

Spanish Descriptors: New Jersey; Planicie costera; Eoceno; Sondeo; ODP; Diagenesis; Carbonato; Profundidad; Discordancia; %%%Transformacion%%%; Micrita; Calcita; Dolomita; Silice; Cemento roca; Medio litoral; Nucleacion; Cristalita; Variacion nivel; Eustasia; Microfosil; Pelicula

18/K/12 (Item 2 from file: 144)
DIALOG(R)File 144 (c) 1999 INIST/CNRS All rts. reserv.

be investigated by ESR. We report the first ESR study of an integral membrane protein, %%%bacteriorhodopsin%%% (BR) in well-aligned multilayers.
We have also examined ISDU-aligned DPPC multilayers incorporating a

2 mol % GA/DPPC membranes. The boundary regions for both BR and GA also
exhibit %%%increased%%% %%%fluidity%%% as monitored by the rotational
diffusion rates. The high water content of the GA/DPPC

English Descriptors: study; EPR spectra; Spin label technique; Cell membranes; Subcellular distribution; Ultracentrifugation; Membrane proteins; Lipids; Phase %%%transformations%%%; Alignment; %%%Bacteriorhodopsin%%%; Vesicles; Bilayers

French Descriptors: 8722B; 8764H; Spectre RPE; Technique marquage spin; Membrane plasmique; Distribution intracellulaire; Ultracentrifugation; Proteine membranaire; Lipide; %%%Transformation%%% phase; Alignement; %%%Bacteriorhodopsine%%%; Vesicule; Bicouche

? ds

Set Items Description
S1 1871321 BACTER?
S2 0 MEMBRANE#
S3 1452758 MEMBRANE?
S4 0 S1 (10N) S2
S5 26356 S1 (10N) S3
S6 3058102 INCREAS? OR ENHANC?
S7 607785 FLUID?
S8 26248 S6 (10N) S7
S9 15 S5 (10N) S8
S10 10 RD S9 (unique items)
S11 18323 UNSATURATED (5N) FATTY (W) ACID?
S12 1620 S6 (10N) S11
S13 17 S12 AND S5
S14 14 RD S13 (unique items)
S15 27 S12 AND S6 AND TRANSFORM?
S16 17 RD S15 (unique items)
S17 18 S8 AND S1 AND TRANSFORM?
S18 12 RD S17 (unique items)
? s s3 (10n) fluidit?

1452758 S3
19612 FLUIDIT?
S19 14567 S3 (10N) FLUIDIT?
? s s19 and s6 and transform? and s1

14567 S19
3058102 S6
600341 TRANSFORM?
1871321 S1
S20 5 S19 AND S6 AND TRANSFORM? AND S1
? rd s20

completed examining records
S21 5 RD S20 (unique items)
? t s21/k/1-5

21/K/1 (Item 1 from file: 5)
DIALOG(R)File 5:(c) 1999 BIOSIS. All rts. reserv.

ABSTRACT: alkaloid content as well as lipid composition. When lowering the temperature, the roots responded by %%%increasing%%% the degree of unsaturation of cellular lipids, which was mainly due to an %%%increased%%% proportion of linolenic acid in the main lipid classes. The modifications in lipid composition were obviously necessary for the roots to retain the proper cell %%%membrane%%% %%%fluidity%%% at each temperature. Despite of changes in %%%membrane%%% lipids, no effect on the distribution of indole alkaloids between the roots and the medium could be detected. Instead, the level of alkaloid accumulation showed a clear %%%increase%%% with lowering temperature.

DESCRIPTORS: PLANT AGROBACTERIUM-RHIZOGENES
%%%BACTERIA%%% MICROORGANISM
CROP INDUSTRY; HORTICULTURE; GENETIC %%%TRANSFORMATION%%%
ROOT MORPHOLOGY
LINOLENIC ACID; TEMPERATURE ADAPTATION; GROWTH RATE
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA):
Microorganisms
%%%Bacteria%%%
Eubacteria
Plants
Vascular Plants
Spermatophytes
Angiosperms
Dicots

21/K/2 (Item 2 from file: 5)
DIALOG(R)File 5:(c) 1999 BIOSIS. All rts. reserv.

INVESTIGATION INTO THE %%%FLUIDITY%%% OF LIPOPOLYSACCHARIDE AND FREE LIPID
A %%%MEMBRANE%%% SYSTEMS BY FOURIER-%%%TRANSFORM%%%
IR SPECTROSCOPY AND
DIFFERENTIAL SCANNING CALORIMETRY

ABSTRACT: lipopolysaccharides and of their lipid moiety, free lipid A, of various species of Gram-negative %%%bacteria%%%, especially of Salmonella minnesota and Escherichia coli, has been investigated by applying mainly Fourier-%%%transform%%% infrared spectroscopy and differential scanning calorimetry. For enterobacterial strains, the transition temperatures of the gel

acyl chains of free lipid A and lipopolysaccharide preparations significantly more rigid and also partially %%%increase%%% the transition temperature. The influence of Mg^{2+} is highest for free lipid A and decreases with %%%increasing%%% length of the sugar side chain within the lipopolysaccharide molecules, whereas the effect of a

phase transition is distinctly expressed only at water concentrations higher than 50-60%. A further %%%increase%%% of the water content still leads to an %%%increase%%% in the phase-transition enthalpy, particularly for lipopolysaccharides with a more complete sugar moiety. The

DESCRIPTORS: SALMONELLA-MINNESOTA ESCHERICHIA-COLI
GRAM-NEGATIVE
%%%BACTERIA%%% HOST CELL MEMBRANE INTERACTIONS
BIOSYSTEMATIC CODES:
04000 %%%Bacteria%%%-Unspecified (1979-)
04810 Enterobacteriaceae (1979-)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA):
Microorganisms
%%%Bacteria%%%

21/K/3 (Item 3 from file: 5)
DIALOG(R)File 5:(c) 1999 BIOSIS. All rts. reserv.

ON PHASE CHANGES IN INNER AND OUTER MEMBRANES AND LIPOPOLYSACCHARIDE
FROM ACINETOBACTER-CALCOACETICUS A FOURIER
%%%TRANSFORM%%% IR STUDY

ABSTRACT: The successful transfer of the resistance plasmid RP1 into the Gram-negative %%%bacterium%%% Acinetobacter calcoaceticus resulted in %%%increased%%% resistance of this microorganism to the antibiotics kanamycin and tetracycline. Microorgansims harboring the RP1 plasmid showed altered fatty acid composition in the lipopolysaccharide fraction and %%%increased%%% outer membrane permeability compared to organisms without the plasmid. Thermotropic gel to liquid crystal lipid phase changes were detected in both inner and outer membranes and purified lipopolysaccharide by Fourier %%%transform%%% infrared spectroscopy. The phase transition temperatures observed in the outer membranes and isolated lipopolysaccharide of

than those of the plasmid-free organisms, while little difference was observed for the inner %%%membranes%%%. The plasmid-induced decrease in outer %%%membrane%%% %%%fluidity%%% may play a mediating role in the mechanisms of antibiotic resistance and susceptibility to host.
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA):
Microorganisms
%%%Bacteria%%%

21/K/4 (Item 4 from file: 5)
DIALOG(R)File 5:(c) 1999 BIOSIS. All rts. reserv.

ABSTRACT: incubation of lymphocytes with Con A. Cell electrophoretic mobility, however, was altered (mean cell mobility %%%increased%%% by 10-15%) in a fast response to stimulation and was observed within several hours.

cell mobility of the experimental cells is believed to be associated with blastogenesis. Neither blastogenic %%%transformation%%% nor short term %%%membrane%%% alterations associated with human lymphocyte activation lead to lipid %%%fluidity%%% changes as measured in steady state by the fluorescence polarization of both DPH and TMA.
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA):
Microorganisms
%%%Bacteria%%%
Plants
Vascular Plants
Spermatophytes
Angiosperms
Dicots
Animals
Chordates
Vertebrates
Mammals
Primates
Humans

21/K/5 (Item 5 from file: 5)
DIALOG(R)File 5:(c) 1999 BIOSIS. All rts. reserv.

ABSTRACT: sensitive in contrast to mature lipoprotein. The precursor protein with the peptide extension is apparently %%%transformed%%% into a new assembly intermediate after the extended peptide is cleaved off. This intermediate may

The results are discussed in terms of control of gene expression for matrix protein. PEA %%%increased%%% the %%%membrane%%% %%%fluidity%%%
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA):
Microorganisms
%%%Bacteria%%%
?ds

Set Items Description
S1 1871321 BACTER?
S2 0 MEMBRANE#
S3 1452758 MEMBRANE?
S4 0 S1 (10N) S2
S5 26356 S1 (10N) S3
S6 3058102 INCREAS? OR ENHANC?
S7 607785 FLUID?
S8 26248 S6 (10N) S7
S9 15 S5 (10N) S8
S10 10 RD S9 (unique items)
S11 18323 UNSATURATED (5N) FATTY (W) ACID?
S12 1620 S6 (10N) S11
S13 17 S12 AND S5
S14 14 RD S13 (unique items)
S15 27 S12 AND S6 AND TRANSFORM?
S16 17 RD S15 (unique items)
S17 18 S8 AND S1 AND TRANSFORM?
S18 12 RD S17 (unique items)
S19 14567 S3 (10N) FLUIDIT?
S20 5 S19 AND S6 AND TRANSFORM? AND S1
S21 5 RD S20 (unique items)
?e au=bloom f

Ref Items Index-term
E1 2 AU=BLOOM ES
E2 42 AU=BLOOM ET
E3 215 *AU=BLOOM F
E4 1 AU=BLOOM F A
E5 1204 AU=BLOOM F E
E6 1 AU=BLOOM F F
E7 20 AU=BLOOM F L
E8 34 AU=BLOOM F R
E9 2 AU=BLOOM FAYE ALVARADO
E10 274 AU=BLOOM FE
E11 1 AU=BLOOM FJ
E12 14 AU=BLOOM FL

Enter P or PAGE for more

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Ref  Items  Index-term
E13     11  AU=BLOOM FLOYD
E14    139  AU=BLOOM FLOYD E
E15     11  AU=BLOOM FR
E16      4  AU=BLOOM FREDRIC R
E17     97  AU=BLOOM G
E18    110  AU=BLOOM G D
E19     15  AU=BLOOM G E
E20      1  AU=BLOOM G F
E21      3  AU=BLOOM G H
E22      1  AU=BLOOM G L
E23      1  AU=BLOOM G M
E24      8  AU=BLOOM G P

      Enter P or PAGE for more
? s e3 or e8 or e15 or e16

       215  AU=BLOOM F
        34  AU=BLOOM F R
        11  AU=BLOOM FR
         4  AU=BLOOM FREDRIC R
   S22   264  AU="BLOOM F" OR AU="BLOOM F R" OR AU="BLOOM FR" OR
          AU="BLOOM FREDRIC R"
? ds


Set    Items  Description
S1   1871321  BACTER?
S2         0  MEMBRANE#
S3   1452758  MEMBRANE?
S4         0  S1 (10N) S2
S5     26356  S1 (10N) S3
S6   3058102  INCREAS? OR ENHANC?
S7    607785  FLUID?
S8     26248  S6 (10N) S7
S9        15  S5 (10N) S8
S10       10  RD S9 (unique items)
S11    18323  UNSATURATED (5N) FATTY (W) ACID?
S12     1620  S6 (10N) S11
S13       17  S12 AND S5
S14       14  RD S13 (unique items)
S15       27  S12 AND S6 AND TRANSFORM?
S16       17  RD S15 (unique items)
S17       18  S8 AND S1 AND TRANSFORM?
S18       12  RD S17 (unique items)
S19    14567  S3 (10N) FLUIDIT?
S20        5  S19 AND S6 AND TRANSFORM? AND S1
S21        5  RD S20 (unique items)
S22      264  AU="BLOOM F" OR AU="BLOOM F R" OR AU="BLOOM FR" OR
AU="BLO-
       OM FREDRIC R"
? s s22 and s1

       264  S22
     18323  S11
   S23      0  S22 AND S11
  s s22 and s5

       264  S22
     26356  S5
   S24      0  S22 AND S5
  s s22 and s1

       264  S22
   1871321  S1
   S25     46  S22 AND S1
? rd s25

  completed examining records
   S26     30  RD S25 (unique items)
? s s26 and transform?

        30  S26
    600341  TRANSFORM?
   S27      6  S26 AND TRANSFORM?
? s s22 and transform?

       264  S22
    600341  TRANSFORM?
   S28     10  S22 AND TRANSFORM?
? rd s28

  completed examining records
   S29      6  RD S28 (unique items)
? s s29 not s27

         6  S29
         6  S27
   S30      0  S29 NOT S27
? t s29/9/1-6

 29/9/1     (Item 1 from file: 55)
DIALOG(R)File 55:Biosis Previews(R)
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12024975  BIOSIS NO.  199900305494
Method for increasing the viability and %%%transformation%%% ability of
 bacteria during or after storage at low temperatures

AUTHOR: %%%Bloom Fredric R%%%(a); Kuo Jonathan; Lin Jhy-Jhu; Ma Jin
AUTHOR ADDRESS: (a)Germantown, MD, USA

JOURNAL: Official Gazette of the United States Patent and Trademark Office
Patents 1221 (1):pNO PAGINATION 15-JUN-99. 1999

PATENT NUMBER: US 5891692  PATENT ASSIGNEE: Life Technologies, Inc
PATENT COUNTRY: USA
ISSN: 0098-1133
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The invention relates to improved E. coli bacteria with enhanced
 viability at low temperatures, methods for producing improved bacterial
 strains capable of enhanced viability at low temperatures, and the
 isolation and use of genetic material capable of enhancing the viability
 of bacteria at low temperatures. In addition to the enhanced viability at
 low temperatures, the bacteria may exhibit enhanced
%%%transformation%%%
 efficiencies after storage at low temperatures. As such, the invention
 may be used for the insertion of exogenous DNA sequences into the
 bacteria of the invention.

DESCRIPTORS:
 MAJOR CONCEPTS: Bacteriology; Methods and Techniques; Molecular
Genetics
   (Biochemistry and Molecular Biophysics)
 BIOSYSTEMATIC NAMES: Enterobacteriaceae--Facultatively Anaerobic,
   Gram-Negative Rods; Eubacteria; Bacteria; Microorganisms
 ORGANISMS: Escherichia coli
(Enterobacteriaceae)--%%%transformation%%%
   ability enhancement; viability enhancement
 BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Bacteria; Eubacteria;
   Microorganisms
 CHEMICALS & BIOCHEMICALS: DNA--bacterial insertion
 MISCELLANEOUS TERMS: Patent


 29/9/2     (Item 2 from file: 55)
DIALOG(R)File 55:Biosis Previews(R)
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09744522  BIOSIS NO.  199598199440
%%%Transformation%%% efficiency of electroporated E. coli cells with
 plasmid DNA of various sizes
BOOK TITLE: Unity in Diversity

AUTHOR: Donahue Robert A Jr; %%%Bloom Fredric R%%%
BOOK AUTHOR/EDITOR: Strauss M S, Ed.
AUTHOR ADDRESS: Life Technol. Inc., 8717 Grovemont Circle, Gaithersburg,
 MD 20884-9980, USA
pPagination varies ABSTRACTS 151 1995

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(AAAS).
          1333 H. Street N.W., Washington, DC 20005, USA
CONFERENCE/MEETING: 1995 AAAS Annual Meeting and Science Innovation
Exposition: The 161st National Meeting of the American Association for the
Advancement of Science, Atlanta, Georgia, USA, February 16-21, 1995
RECORD TYPE: Citation
LANGUAGE: English

DESCRIPTORS:
 MAJOR CONCEPTS: Genetics; Membranes (Cell Biology); Methods and
   Techniques; Physiology
 BIOSYSTEMATIC NAMES: Enterobacteriaceae--Eubacteria; Bacteria
 ORGANISMS: Escherichia coli (Enterobacteriaceae)
 BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): bacteria; eubacteria;
   microorganisms
 MISCELLANEOUS TERMS: DNA TRANSFER METHOD; MEETING
ABSTRACT; MEETING
   POSTER
CONCEPT CODES:
 03502  Genetics and Cytogenetics-General
 10052  Biochemical Methods-Nucleic Acids, Purines and Pyrimidines
 10504  Biophysics-General Biophysical Techniques
 10508  Biophysics-Membrane Phenomena
 10610  External Effects-Electric, Magnetic and Gravitational Phenomena
 31000  Physiology and Biochemistry of Bacteria
 31500  Genetics of Bacteria and Viruses
 00520  General Biology-Symposia, Transactions and Proceedings of
        Conferences, Congresses, Review Annuals
 10062  Biochemical Studies-Nucleic Acids, Purines and Pyrimidines
BIOSYSTEMATIC CODES:
```

06702 Enterobacteriaceae (1992-)

29/9/3 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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08250004 BIOSIS NO. 000094041352
DH11S AN ESCHERICHIA-COLI STRAIN FOR PREPARATION OF SINGLE-STRANDED DNA FROM PHAGEMID VECTORS

AUTHOR: LIN J-J; SMITH M; JESSEE J; %%%BLOOM F%%%
AUTHOR ADDRESS: MOL. BIOL. RES. AND DEV., LIFE TECHNOL. INC., P.O. BOX 9418, GAITHERSBURG, MD 20877

JOURNAL: BIOTECHNIQUES 12 (5): 1992. 718-721.
FULL JOURNAL NAME: Biotechniques
CODEN: BTNQD
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: A new Escherichia coli strain DH11S [mcrA DELTA (mrr-hsdRMS-mcrBC) DELTA (lac-proAB) DELTA (rec1398) deoR rpsL srl::Tn10/F'proAB+lacIqZ DELTA M15] has been constructed %%%Transformation%%% of DH11S competent cells with any of several different phagemid vectors [pSPORT1, pBluescript II SK(+), pGEM11Zf(+)] results in the production of highly purified single-stranded DNAs upon the addition of M13KO7 helper phage. Contamination by double-stranded DNAs was observed with all the other studied strains (XL1-Blue, JM109, DH5 alpha F'IQ). The optimal yield of single-stranded DNA production was obtained when glycerol stocks made from stationary phase cells or single colonies from over-night ampicillin plates of DH11S containing the phagemid vector were infected with M13KO7 helper phage using a wide range (1 to 100) of multiplicities of infection. Five different pSPORT1 clones containing cDNA inserts of various lengths (0.3 kb to 2.0 kb) were compared using these four different bacterial strains. The use of strain DH11S results in the best yields and quality of single-stranded DNA. Therefore, DH11S appears to be the best all-around host for various applications that require single-stranded DNA such as DNA sequencing, in vitro mutagenesis and construction of subtractive cDNA libraries.

DESCRIPTORS: OPTIMAL YIELD ANALYTICAL METHOD
CONCEPT CODES:
10052 Biochemical Methods-Nucleic Acids, Purines and Pyrimidines
10062 Biochemical Studies-Nucleic Acids, Purines and Pyrimidines
10506 Biophysics-Molecular Properties and Macromolecules
31000 Physiology and Biochemistry of Bacteria
31500 Genetics of Bacteria and Viruses
32000 Microbiological Apparatus, Methods and Media
33504 Virology-Bacteriophage
BIOSYSTEMATIC CODES:
02110 Bacterial Viruses-Unspecified (1981-)
06702 Enterobacteriaceae (1992-)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA):
Microorganisms
Viruses
Bacteria
Eubacteria

29/9/4 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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06191791 BIOSIS NO. 000043003264
PLASMID %%%TRANSFORMATION%%% OF ESCHERICHIA-COLI AND OTHER BACTERIA

AUTHOR: HANAHAN D; JESSEE J; %%%BLOOM F R%%%
AUTHOR ADDRESS: DEP. BIOCHEM. BIOPHYSICS, HORMONE RES. INST., UNIV. CALIF., SAN FRANCISCO, CALIF. 94143

JOURNAL: MILLER, J. H. (ED.) METHODS IN ENZYMOLOGY. VOL. 204. BACTERIAL GENETIC SYSTEMS. XXIX+706P. ACADEMIC PRESS, INC.: SAN DIEGO, CALIFORNIA, USA; LONDON, ENGLAND, UK; ILLUS. ISBN 0-12-182105-6. 0 (0). 1991. 63-113.
CODEN: MENZA
RECORD TYPE: Citation
LANGUAGE: ENGLISH

DESCRIPTORS: PLATING CALCIUM MANGANESE BASED %%%TRANSFORMATION%%% AGAR STAB BOTTLE STORAGE METHOD
CONCEPT CODES:
10300 Replication, Transcription, Translation
13014 Metabolism-Nucleic Acids, Purines and Pyrimidines
31000 Physiology and Biochemistry of Bacteria
31500 Genetics of Bacteria and Viruses
32000 Microbiological Apparatus, Methods and Media
10062 Biochemical Studies-Nucleic Acids, Purines and Pyrimidines
BIOSYSTEMATIC CODES:
06702 Enterobacteriaceae (1992-)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA):
Microorganisms
Bacteria
Eubacteria

29/9/5 (Item 3 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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05646097 BIOSIS NO. 000083119244
BIOASSAY FOR SPECIFIC DNA SEQUENCES USING A NON-RADIOACTIVE PROBE

AUTHOR: HARTLEY J L; BERNINGER M; JESSEE J A; %%%BLOOM F R%%%; TEMPLE G F
AUTHOR ADDRESS: BETHESDA RESEARCH LAB., LIFE TECHNOLOGIES INC., GAITHERSBURG, MD 20877

JOURNAL: GENE (AMST) 49 (3): 1986 (RECD. 1987). 295-302.
FULL JOURNAL NAME: GENE (Amsterdam)
CODEN: GENED
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: A novel method for detecting specific DNA sequences is described. The method uses a non-radioactive DNA probe, called a probe-vector, that can %%%transform%%% competent Escherichia coli cells at high efficiency only when it has hybridized to a specific DNA target, thus forming a circular, double-stranded, plasmid-like molecule. The probe-vector carries a plasmid origin of replication and a gene that confers antibiotic resistance on %%%transformed%%% E. coli. The output of the assay-colored bacterial colonies on an agar plate-is quantitative and proportional over a wide range of target concentrations. The utility of the probe-vector method for detecting hepatitis B virus (HBV) DNA in human serum is demonstrated. The assay can detect as little as 0.1 pg HBV DNA. The presence of an internal standard monitors DNA recovery and E. coli %%%transformation%%% efficiency for each sample. The assay has the potential to simultaneously measure the DNA of two or more pathogens within the same clinical sample.

DESCRIPTORS: ESCHERICHIA-COLI HUMAN SERUM HEPATITIS B VIRUS DETECTION VECTOR %%%TRANSFORMATION%%% PATHOGENS
CONCEPT CODES:
10010 Comparative Biochemistry, General
10052 Biochemical Methods-Nucleic Acids, Purines and Pyrimidines
10062 Biochemical Studies-Nucleic Acids, Purines and Pyrimidines
10506 Biophysics-Molecular Properties and Macromolecules
12504 Pathology, General and Miscellaneous-Diagnostic
31500 Genetics of Bacteria and Viruses
33506 Virology-Animal Host Viruses
36001 Medical and Clinical Microbiology-General, Methods and Techniques
36006 Medical and Clinical Microbiology-Virology
10068 Biochemical Studies-Carbohydrates
10300 Replication, Transcription, Translation
12508 Pathology, General and Miscellaneous-Inflammation and Inflammatory Disease
13014 Metabolism-Nucleic Acids, Purines and Pyrimidines
14006 Digestive System-Pathology
15002 Blood, Blood-Forming Organs and Body Fluids-Blood and Lymph Studies
22002 Pharmacology-General
30500 Morphology and Cytology of Bacteria
31000 Physiology and Biochemistry of Bacteria
32000 Microbiological Apparatus, Methods and Media
33502 Virology-General; Methods
38502 Chemotherapy-General, Methods, Metabolism
BIOSYSTEMATIC CODES:
04810 Enterobacteriaceae (1979-)
86215 Hominidae
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA):
Microorganisms
Bacteria
Animals
Chordates
Vertebrates
Mammals
Primates
Humans

29/9/6 (Item 1 from file: 144)
DIALOG(R)File 144:Pascal
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10201041 PASCAL No. 92-0406943

DH11S an Escherichia coli strain for preparation of single-stranded RNA from phagemid vectors
JHY-JHU LIN SMITH M. JESSEE J. %%%BLOOM F%%%
Life Technologies Inc molecular biology res development Gaithersburg MD 20877, USA
Journal Biotechniques 1992 12 (5) 718-721
ISSN 0736-6205 CODEN BTNQDO Availability INIST-20939. 354000021257800210
No of Refs. 22 ref
Document Type P (Serial) , A (Analytic)
Country of Publication USA
Language English

English Descriptors Escherichia coli, Strain, Single stranded DNA, Vector, Phage, Purification, Contamination, Genetic %%%transformation%%%
Broad Descriptors Enterobacteriaceae, Bacteria, Virus, Enterobacteriaceae Bacterie, Virus Enterobacteriaceae, Bacteria, Virus

French Descriptors Escherichia coli, Souche, DNA monocatenaire, Vecteur Bacteriophage Purification, Contamination, %%%Transformation%%% genetique

Classification Codes 002A31B01D, 215
?ds

Set Items Description
S1 1871321 BACTER?
S2 0 MEMBRANE#
S3 1452758 MEMBRANE?
S4 0 S1 (10N) S2
S5 26356 S1 (10N) S3
S6 3058102 INCREAS? OR ENHANC?
S7 607785 FLUID?
S8 26248 S6 (10N) S7
S9 15 S5 (10N) S8
S10 10 RD S9 (unique items)
S11 18323 UNSATURATED (5N) FATTY (W) ACID?
S12 1620 S6 (10N) S11
S13 17 S12 AND S5
S14 14 RD S13 (unique items)
S15 27 S12 AND S6 AND TRANSFORM?
S16 17 RD S15 (unique items)
S17 18 S8 AND S1 AND TRANSFORM?
S18 12 RD S17 (unique items)
S19 14567 S3 (10N) FLUIDIT?
S20 5 S19 AND S6 AND TRANSFORM? AND S1
S21 5 RD S20 (unique items)
S22 264 AU= BLOOM F" OR AU="BLOOM F R" OR AU="BLOOM FR" OR AU="BLO-
OM FREDRIC R"
S23 0 S22 AND S11
S24 0 S22 AND S5
S25 46 S22 AND S1
S26 30 RD S25 (unique items)
S27 6 S26 AND TRANSFORM?
S28 10 S22 AND TRANSFORM?
S29 6 RD S28 (unique items)
S30 0 S29 NOT S27
? s s22 and (fatty (w) acid?)

264 S22
248583 FATTY
2568254 ACID?
222514 FATTY(W)ACID?
S31 0 S22 AND (FATTY (W) ACID?)
? log y

17sep99 12:38:49 User231899 Session D254.3
$9.24 1.760 DialUnits File55
$13.95 9 Type(s) in Format 9
$1.65 11 Type(s) in Format 95 (KWIC)
$15.60 20 Types
$24.84 Estimated cost File55
$17.17 3.270 DialUnits File5
$31.00 20 Type(s) in Format 9
$3.75 25 Type(s) in Format 95 (KWIC)
$34.75 45 Types
$51.92 Estimated cost File5
$8.19 0.691 DialUnits File434
$0.00 1 Type(s) in Format 95 (KWIC)
$0.00 1 Types
$8.19 Estimated cost File434
$11.48 3.531 DialUnits File144
$8.70 6 Type(s) in Format 9
$0.80 4 Type(s) in Format 95 (KWIC)
$9.50 10 Types
$20.98 Estimated cost File144
OneSearch, 4 files, 9.252 DialUnits FileOS
FTSNET 0.483 Hrs
$105.93 Estimated cost this search
$106.04 Estimated total session cost 9.416 DialUnits

Logoff level 99.07.29.D 12:38:49

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FILE 'USPAT' ENTERED AT 13:40:44 ON 17 SEP 1999

*********************************
*    U.S. PATENT TEXT FILE      *
*                               *
* THE WEEKLY PATENT TEXT AND IMAGE DATA IS CURRENT      *
* THROUGH September 14, 1999.          *
*                               *
*                               *
*********************************

=> s fatty (3n) acid?

     98838 FATTY
     487253 ACID?
L1    84913 FATTY (3A) ACID?

=> s unsaturated

L2    113860 UNSATURATED

=> s l1 (5n) l2

L3    11398 L1 (5A) L2

=> s membrane?

L4    111229 MEMBRANE?

=> s bacteri?

L5    88604 BACTERI?

=> s l4 (5n) l5

L6    1923 L4 (5A) L5

=> s l4 (10n) l5

L7    3021 L4 (10A) L5

=> dhis

'DHIS' IS NOT A RECOGNIZED COMMAND

=> d his


    (FILE 'USPAT' ENTERED AT 13:40:44 ON 17 SEP 1999)
L1    84913 S FATTY (3N) ACID?
L2    113860 S UNSATURATED
L3    11398 S L1 (5N) L2
L4    111229 S MEMBRANE?
L5    88604 S BACTERI?
L6    1923 S L4 (5N) L5
L7    3021 S L4 (10N) L5

=> s l7 (p) l3

L8      7 L7 (P) L3

=> s increas? or enhanc?

     1414558 INCREAS?
     448475 ENHANC?
L9    1521498 INCREAS? OR ENHANC?
 95% OF LIMIT FOR TOTAL ANSWERS REACHED

=> d his


    (FILE 'USPAT' ENTERED AT 13:40:44 ON 17 SEP 1999)
L1    84913 S FATTY (3N) ACID?
L2    113860 S UNSATURATED
L3    11398 S L1 (5N) L2
L4    111229 S MEMBRANE?
L5    88604 S BACTERI?
L6    1923 S L4 (5N) L5
L7    3021 S L4 (10N) L5
L8      7 S L7 (P) L3
L9    1521498 S INCREAS? OR ENHANC?

=> s transformation

L10   60696 TRANSFORMATION

=> s l9 (10n) l10

L11   2830 L9 (10A) L10

=> s l11 and l8

L12     2 L11 AND L8

=> d l12 bib rel hit


US PAT NO.    5,936,139 [IMAGE AVAILABLE]      L12: 1 of 2
DATE ISSUED   Aug. 10, 1999
TITLE         Cyclopropane fatty acid expression in plants
INVENTOR      Katherine M. Schmid, 4644 Rookwood Ave., Indianapolis, IN
              46208
APPL-NO.      08/844,305
DATE FILED    Apr. 10, 1997
ART-UNIT      169
PRIM-EXMR     Elizabeth F. McElwain
LEGAL-REP     Saliwanchik, Lloyd & Saliwanchik

US PAT NO.    5,936,139 [IMAGE AVAILABLE]      L12: 1 of 2
REL-US-DATA   Continuation of Ser. No. 275,867, Jul. 15, 1994
              abandoned

SUMMARY

BSUM(5)

In gram negative **bacteria** cyclopropane fatty acids occur in
stationary phase **membranes**. The cyclopropane fatty acids produced by
E. coli are synthesized on phospholipid substrates. In plants, unusual
fatty aids are encountered primarily in seed oils. Certain fatty acid
modifications, such as .DELTA.12 desaturation or hydroxylation, occur on
phospholipid substrates, and the fatty acids are then transferred to
triacylglycerols. In a few plant species, cyclopropane fatty acids can
reach high levels, ie. up to 40% in Litchi chinensis. Vickery et al.
1980, J. Am. Oil Chem. Soc. 57: 87-91, and Gaydou et al., 1993, J. Ag.
Food Chem. 41: 886-890. It is more common to find cyclopropene **fatty**
**acids** (the corresponding **unsaturated** cyclopropane **fatty**
```

acids particularly in the order Malvales (for example, as in the report by Bohannon and Kleiman, Lipids 13 (1978), 270-273), and a biosynthetic pathway through cyclopropane fatty acids was postulated by Yano et al. 1972 Lipids 7 35-45 However, no in vitro measurement of cyclopropane fatty acid synthase activity has been reported in plant tissues to confirm the existence of this pathway It is unknown if plants will express the bacterial cfa gene, if the corresponding messenger RNA will translate to active protein, and whether active bacterial cyclopropane fatty acid synthetase will cause the synthesis of cyclopropane fatty acid-phospholipids Furthermore, it is unknown in plants where cyclopropane fatty acids do not occur normally whether these cyclopropane fatty acids will be channelled from phospholipids into triacylglycerol Although the E coli cyclopropane fatty acid synthase normally acts on phospholipids containing vaccenate (18 1 DELTA 11) and palmitoleate (16 1 DELTA 9), **unsaturated** **fatty** **acid** auxotrophs grown on oleate (18 1 DELTA 9) will accumulate the corresponding cyclopropane fatty acid, namely dihydrosterculate (DHS) Marinari et al., 1974 Biochemistry 13, 1978-1983 and Ohlrogge et al., 1976 Biochim Biophys Acta 431 257-267 Phosphatidylethanolamine, phosphatidylglycerol and cardiolipin are effective substrates for purified E coli cyclopropane fatty acid synthase Phosphatidylcholine is unsatisfactory as a substrate for the Clostridium butyricum enzyme Law J H 1971 Accts Chem Res 4 199-203

DETDESC

DETD(4)

In practicing the present invention a bacterial cfa gene, combined with a plant operable promoter and any other desirable or necessary expression **enhancing** sequences ie, termination sequences (polyadenylation sequences), is inserted into a **transformation** vector, and the plant cell employing standard transformation techniques Once transformed, whole plants are regenerated which stably incorporate the cfa gene within their genome The plants express the cfa gene Expression can be constitutive or tissue specific Since oil is produced from the seed of oilseed crops it is preferred to express the cfa gene under the control of a seed-specific promoter in oilseeds for maximum recovery of cyclopropane fatty acids for lubricant and other uses

=> d l12 2 bib rel hit

US PAT NO 5,891,692 [IMAGE AVAILABLE] L12 2 of 2
DATE ISSUED Apr 6, 1999
TITLE Method for **increasing** the viability and **transformation** ability of bacteria during or after storage at low temperatures
INVENTOR Fredric R Bloom, Germantown, MD
Jonathan Kuo, Germantown, MD
Jhy-Jhu Lin, Potomac, MD
Jin Ma, Brookville, MD
ASSIGNEE Life Technologies, Inc Rockville, MD (U S corp)
APPL-NO 08/826,426
DATE FILED Mar 27, 1997
ART-UNIT 166
PRIM-EXMR Johnny F Railey, II
LEGAL-REP Jeffrey Auerbach, Kevin McCabe

US PAT NO 5,891,692 [IMAGE AVAILABLE] L12 2 of 2
TITLE Method for **increasing** the viability and **transformation** ability of bacteria during or after storage at low temperatures

ABSTRACT
The invention relates to improved E coli bacteria with enhanced viability at low temperatures, methods for producing improved bacterial strains capable of enhanced viability at low temperatures, and the isolation and use of genetic material capable of enhancing the viability of bacteria at low temperatures In addition to the **enhanced** viability at low temperatures, the bacteria may exhibit **enhanced** **transformation** efficiencies after storage at low temperatures As such, the invention may be used for the insertion of exogenous DNA sequences into the bacteria of the invention

SUMMARY

BSUM(4)

The invention relates to stable storage of bacteria at low temperatures (e g , about 4 degree C to about -20 degree C) Specifically, the invention relates to improved bacteria having **enhanced** viability or **enhanced** **transformation** efficiency during storage at low temperatures methods for producing such bacteria, and the genetic material involved in such **enhancement** The invention further relates to such cells made competent for **transformation**, to methods for making such competant cells and to methods of transforming such competent cells

SUMMARY

BSUM(10)

The method of the invention specifically comprises altering the fatty acid content of the bacteria Preferably, the **unsaturated** **fatty** **acid** content of the bacteria is altered in accordance with the invention Preferably, one or more of the fatty acids is increased in the bacteria, and most preferably the fatty acid content is in the **bacterial** **membrane** Preferred methods of altering the fatty acid content includes genetic alteration of the bacteria (e g by enhancing expression of one or more genes involved in production (synthesis or catabolism) of one or more fatty acids) Bacteria used according to the invention include both gram positive and gram negative bacteria although gram negative bacteria such as Escherichia are preferred Particularly preferred bacteria include Escherichia coli

SUMMARY

BSUM(11)

The invention also relates to bacteria having **enhanced** viability and/or **enhanced** **transformation** efficiency after periods of storage at low temperatures (e g , greater than -80 degree C , preferably about -20 degree C to about 4 degree C) Such storage stable cells comprise an altered fatty acid content Preferably, the storage stable bacterial cells or competent cells have an increased level or amount of one or more fatty acids, preferably unsaturated fatty acids Such increased amount of fatty acid content may be caused by genetic alterations, preferably by enhancing expression of one or more genes involved in changing the fatty acid content of the bacteria

SUMMARY

BSUM(13)

The invention further provides a DNA molecule comprising a sequence capable of **enhancing** the viability or the **transformation** efficiency of a bacterium at low temperatures (e g , greater than -80 degree C , preferably about -20 degree C to about 4 degree C) Such DNA molecule preferably comprises one or more genes involved in the production of one or more fatty acids in the bacteria Most preferably, the nucleic acid molecule of the invention allows enhanced production of fatty acids in the bacteria

DETDESC

DETD(10)

The present invention relates to a method for **enhancing** viability or **transformation** efficiency of a bacterium by altering the fatty acid content (preferably the unsaturated fatty acid content) The invention also relates to a method for obtaining a bacterium having such an altered fatty acid content The method involves modifying or mutating a bacterium such that the fatty acid content of said bacterium is altered relative to an unmodified or unmutated bacterium The modified or mutated bacterium having **enhanced** viability or **enhanced** **transformation** efficiency may then be isolated Selection of such a modified bacterium may be selected by assaying for such enhanced characteristics relative to the unmodified bacterium (see Examples) Preferably, the amount of fatty acid is increased in the bacterium This increase may be accomplished by various techniques, for example, by adding one or more fatty acids to the bacterium or by genetically modifying the bacterium Any type of genetic modification may be used in accordance with the invention, including natural selection, artificial mutation and genetic engineering Such techniques are well known in the art Common genetic engineering techniques include cloning one or more fatty acid genes in a vector to increase copy number, or enhancing translation or transcription of such genes by, for example, overexpression (e g , using an expression vector)

DETDESC

DETD(11)

The method of the invention provides for the production of cells which have **enhanced** viability and/or **enhanced** **transformation** efficiency upon storage at low temperatures (e g , greater than -80 degree C , preferably about -20 degree C to about 4 degree C) Such storage stable strains may be stored for extended periods at various temperatures According to the invention, alteration of the content of one or more fatty acids results in **enhanced** viability or **enhanced** **transformation** efficiency Alteration of the fatty acid content can be accomplished in any bacteria to provide bacteria having these beneficial characteristics Preferably, such bacteria are modified genetically

DETDESC

DETD(15)

The bacteria of the invention having altered fatty acid content may be made competent for transformation using well known techniques Such competent bacterial cells have, according to the invention, **enhanced** **transformation** efficiency upon or after storage at low temperatures (e g , greater than -80 degree C , preferably about -20 degree C to about 4 degree C) Transformation, in the context of the current

invention, is the process by which exogenous DNA is inserted into a bacterium, causing the bacterium to change its genotype and/or phenotype Such a change in genotype or phenotype may be transient or otherwise Exogenous DNA is any DNA, whether naturally occurring or otherwise, from any source that is capable of being inserted into any organism Preferably, exogenous DNA is any DNA, whether naturally occurring or otherwise, from any source that is capable of being inserted into bacteria Such exogenous DNA includes, without limitation, plasmid DNA, cosmid DNA, eukaryotic (particularly mammalian, and most particularly human) DNA, DNA libraries, cDNA libraries, expression vectors and phage DNA (such as bacteriophage lambda DNA)

DETDESC

DETD(19)

The present invention also concerns genetic material capable of **enhancing** the viability and/or **transformation** efficiency of said bacterium at low temperatures. In particular, the invention concerns isolated nucleic acid molecules which allow alteration of fatty acid content when introduced into a bacterium. Preferably, the nucleic acid molecule comprises one or more genes involved in changing fatty acid content of said bacterium. Such genetic material is preferably contained in a cloning or expression vector. In one aspect of the invention, the nucleic acid molecule comprises one or more genes which enhance the level of one or more fatty acids. Preferably, the genes enhance unsaturated fatty acid levels. Such unsaturated fatty acids include, but are not limited to, oleic acid, linoleic acid, linolenic acid, cis vaccenic acid, and palmitoleic acid. Such genes include but are not limited to fabB, fabF, fabD, fabG, fabA, fabH, fabI, fabZ, fadA, fadB, fadE, fadL, fadR, farR, fatA, etc

DETDESC

DETD(73)

Increases in **Transformation** Efficiency Due to Presence of Clone 1

DETDESC

DETD(74)

FIG. 7 shows that DH10B strain containing cosmid clone 1 stored at -20 degree. C. for three months exhibits an **enhanced** **transformation** efficiency (greater than 100 fold) compared with DH10B containing the vector pCP13 similarly stored. After 3 months at -20 degree. C., DH10B containing the vector pCP13 cells exhibited a transformation efficiency of less than 1.0 times 10 sup.5 Transformants/ mu.g. In contrast, DH10B cells containing cosmid clone 1 exhibited a transformation efficiency of >1.0 times.10 sup.6 Transformants / mu.g.

DETDESC

DETD(76)

Isolation of DNA Fragments of Clone 1 Reponsible for **Increased** Viability and **Transformation** Efficiency

CLAIMS

CLMS(1)

What is claimed is

1. A method for obtaining enhanced viability of a bacterial culture subjected to storage at a temperature of from about +4 degree. C. to about -80 degree. C. which comprises

(a) modifying bacteria of said culture by introducing into said bacteria one or more genes that encode one or more gene products that increases the percentage of **unsaturated** **fatty** **acids** in the **membrane** of said **bacterium** relative to total fatty acids therein, wherein said modified bacteria express said one or more encoded gene products, and

(b) subjecting said bacterial culture to said storage, wherein said one or more gene products causes said bacteria to exhibit enhanced viability relative to that exhibited by said bacteria prior to said modification (a)

CLAIMS

CLMS(2)

2. A method for **enhancing** the **transformation** ability of a bacterial culture which comprises

(a) modifying bacteria of said culture by introducing into said bacteria one or more genes that encode one or more gene products that increases the percentage of **unsaturated** **fatty** **acids** in the **membrane** of said **bacterium** relative to total fatty acids therein, wherein said modified bacteria express said one or more encoded gene products, and

(b) subjecting said bacterial culture to transformation, wherein said one or more gene products causes said bacteria to exhibit **enhanced** **transformation** ability relative to that exhibited by said bacteria prior to said modification (a)

CLAIMS

CLMS(9)

9. The method of claims 1 or 2, wherein said one or more gene products increases the percentage of an **unsaturated** **fatty** **acid** selected from the group consisting of oleic acid, linoleic acid, palmitoleic acid, and cis-vaccenic acid in the **membrane** of said **bacterium** relative to total fatty acids therein

CLAIMS

CLMS(11)

11. The method of claims 1 or 2, wherein said one or more gene products increases the total content of **unsaturated** **fatty** **acid** in the **membrane** of said modified **bacterium**

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(FILE 'USPAT' ENTERED AT 13:40:44 ON 17 SEP 1999)
L1 84913 S FATTY (3N) ACID?
L2 113860 S UNSATURATED
L3 11398 S L1 (5N) L2
L4 111229 S MEMBRANE?
L5 88604 S BACTERI?
L6 1923 S L4 (5N) L5
L7 3021 S L4 (10N) L5
L8 7 S L7 (P) L3
L9 1521498 S INCREAS? OR ENHANC?
L10 60696 S TRANSFORMATION
L11 2830 S L9 (10N) L10
L12 2 S L11 AND L8

=> s l8 not l12

L13 5 L8 NOT L12

=> d l13 1-5 bib rel

US PAT NO: 5,866,789 [IMAGE AVAILABLE] L13: 1 of 5
DATE ISSUED: Feb. 2, 1999
TITLE: Fatty acid alteration by a 9 desaturase in transgenic plant tissue
INVENTOR: David F. Hildebrand, Fayette County, KY
W. Scott Grayburn, Fayette County, KY
ASSIGNEE: Pioneer Hi-Bred International, Inc., Des Moines, IA (U.S. corp.)
APPL-NO: 08/588,540
DATE FILED: Jan. 18, 1996
ART-UNIT: 169
PRIM-EXMR: Elizabeth F. McElwain
LEGAL-REP: Foley & Lardner

US PAT NO: 5,866,789 [IMAGE AVAILABLE] L13: 1 of 5
REL-US-DATA: Continuation of Ser. No. 376,534, Jan. 20, 1995, abandoned, which is a continuation of Ser. No. 247,622, May 23, 1994, abandoned, which is a continuation of Ser. No. 816,288, Dec. 31, 1991, abandoned

US PAT NO: 5,624,958 [IMAGE AVAILABLE] L13: 2 of 5
DATE ISSUED: Apr. 29, 1997
TITLE: Disinfecting contact lenses
INVENTOR: Charles E. Isaacs, 30 Devon Dr., North Manalapan, NJ 07726
Kwang S. Kim, 178 Dahlia St., Staten Island, NY 10312
Halldor Thormar, Langagerdi 15, Reykjavik, Iceland
William C. Heird, 2001 Holcombe Blvd., Apt. 2701, Houston, TX 77030
Henryk M. Wisniewski, 141 Nixon Ave., Staten Island, NY 10304
APPL-NO: 08/408,079
DATE FILED: Mar. 22, 1995
ART-UNIT: 125
PRIM-EXMR: Zohreh Fay
LEGAL-REP: Kane, Dalsimer, Sullivan, Kurucz, Levy, Eisele and Richard

US PAT NO: 5,624,958 [IMAGE AVAILABLE] L13: 2 of 5
REL-US-DATA: Continuation-in-part of Ser. No. 58,056, May 3, 1993, Pat. No. 5,434,182, which is a continuation of Ser. No. 896,120, Jun. 10, 1992, abandoned, which is a continuation-in-part of Ser. No. 543,111, Jun. 25, 1990, abandoned, which is a continuation-in-part of Ser. No. 365,291, Jun. 12, 1989, abandoned, which is a continuation-in-part of Ser. No. 140,078, Dec. 31, 1987, Pat. No. 4,997,851

US PAT NO 5,466,714 [IMAGE AVAILABLE] L13: 3 of 5
DATE ISSUED Nov 14, 1995
TITLE Spermicidal and cytocidal fatty acid compositions
INVENTOR Charles E. Isaacs, Manalapan, NJ
Kwang S. Kim, Staten Island, NY
Henryk M. Wisniewski, Staten Island, NY
ASSIGNEE Research Foundation For Mental Health Hygiene, Inc., Albany, NY (U.S. corp.)
APPL-NO 08/070,086
DATE FILED May 28, 1993
ART-UNIT 124
PRIM-EXMR Arthur C. Prescott
LEGAL-REP Kane, Dalsimer, Sullivan, Kurucz, Levy, Eisele and Richard

US PAT NO 5,466,714 [IMAGE AVAILABLE] L13: 3 of 5
REL-US-DATA Continuation-in-part of Ser. No. 896,121, Jun. 10, 1992, abandoned, which is a continuation-in-part of Ser. No. 543,111, Jun. 25, 1990, abandoned, which is a continuation-in-part of Ser. No. 365,291, Jun. 12, 1989, abandoned, which is a continuation-in-part of Ser. No. 140,078, Dec. 31, 1987, Pat. No. 4,997,851

US PAT NO 5,434,182 [IMAGE AVAILABLE] L13: 4 of 5
DATE ISSUED Jul. 18, 1995
TITLE Antibacterial fatty acid compositions
INVENTOR Charles E. Isaacs, 30 Devon Dr., North, Manalapan, NJ 07726
Kwang S. Kim, 178 Dahlia St., Staten Island, NY 10312
Halldor Thormar, Langagerdi 15, Reykjavik, Iceland
William C. Heird, 2001 Holcombe Blvd., Apt. 2701, Houston, TX 77030
Henryk M. Wisniewski, 141 Nixon Ave., Staten Island, NY 10304
APPL-NO 08/058,056
DATE FILED May 3, 1993
ART-UNIT 125
PRIM-EXMR Zohreh Fay
LEGAL-REP Kane, Dalsimer, Sullivan, Kurucz, Levy, Eisele and Richard

US PAT NO 5,434,182 [IMAGE AVAILABLE] L13: 4 of 5
REL-US-DATA Continuation of Ser. No. 896,120, Jun. 10, 1992, abandoned, which is a continuation-in-part of Ser. No. 543,111, Jun. 25, 1990, which is a continuation-in-part of Ser. No. 365,291, Jun. 12, 1989, which is a continuation-in-part of Ser. No. 140,078, Dec. 31, 1987, Pat. No. 4,997,851.

US PAT NO 4,997,851 [IMAGE AVAILABLE] L13: 5 of 5
DATE ISSUED Mar. 5, 1991
TITLE Antiviral and antibacterial activity of fatty acids and monoglycerides
INVENTOR Charles E. Isaacs, Manalapan, NJ
Halldor Thormar, Reyjavik, Iceland
Kwang S. Kim, Staten Island, NY
William C. Heird, New York, NY
APPL-NO 07/140,078
DATE FILED Dec. 31, 1987
ART-UNIT 125
PRIM-EXMR Douglas W. Robinson
ASST-EXMR Zohreh A. Fay
LEGAL-REP Kane, Dalsimer, Sullivan, Kurucz, Levy, Eisele and Richard

US PAT NO 4,997,851 [IMAGE AVAILABLE] L13: 5 of 5

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L2 113860 S UNSATURATED
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L11 2830 S L9 (10N) L10
L12 2 S L11 AND L8
L13 5 S L8 NOT L12

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U.S. Patent & Trademark Office LOGOFF AT 13:49:23 ON 17 SEP 1999